DRAFT FOR PUBLIC REVIEW

ENVIRONMENTAL ASSESSMENT/REGULATORY IMPACT REVIEW/

INITIAL REGULATORY FLEXIBILITY ANALYSIS

FOR

A REGULATORY AMENDMENT

FOR

DEFINING A HALIBUT SUBSISTENCE FISHERY CATEGORY

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August 11, 2000

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The Halibut Subsistence EA/RIR/IRFA addresses the development of fishery regulations to define the legal harvest of halibut for subsistence use in the Bering Sea/Aleutian Islands and Gulf of Alaska. First, subsistence halibut harvests are currently included within the personal use, or sportfish, regulations, largely because the pattern of subsistence use has not been adequately documented. Sportfish regulations do not reflect the customary and traditional use of halibut in rural communities. Federal fishery regulations for Alaska limit all non-commercial halibut harvests to two fish per person per day, caught on a single line with a maximum of two hooks or a spear, from February 1 through December 31. Increased enforcement of commercial halibut IFQ and CDQ regulations has led to increased awareness of the conflict between Federal halibut regulations and customary and traditional subsistence practices of Alaska Natives in coastal communities.

Second, subsistence harvest estimates provided to the International Pacific Halibut Commission may not adequately account for all subsistence removals due to lack of adequate monitoring, reporting, and estimation processes. Co-management agreements would enhance data collection of subsistence harvests. Despite the lack of complete data, all subsistence harvests are estimated to account for less than one percent of total halibut removals.

A management proposal to define halibut subsistence was first developed to address a conflict between the IFQ/CDQ regulations and customary and traditional practices of Alaska Natives in IPHC regulatory Area 4E, whereby halibut CDQ fishermen were retaining undersized halibut for personal use. In December 1996, the Council initiated preparation of an EA/RIR for a regulatory amendment to allow the legal harvest of halibut for subsistence in rural communities to conform with state and Federal statutes that provide for the opportunity for the continued existence of these traditional cultures and economies.

In June 1997, the Council took final action to recommend the allowable retention of undersized halibut in the Area 4E Community Development Quota fishery. That measure took effect June 4, 1998, was renewed by the IPHC in January 2000, and sunsets on December 31, 2001. The Council did not recommend a sunset, but the IPHC wanted to ensure an adequate data collection program.

The Council deferred action in 1998 and 1999 on the larger issue of defining eligibility, legal gear, customary and traditional trade, bag limits, and cooperative management agreements for a halibut subsistence fishery, while the State of Alaska Legislature considered amending the State Constitution to come into compliance with Federal law related to management of fish and game on Federal lands. While the dual management issue does not affect management of Pacific halibut, the Council chose to postpone its action to allow the State to address its management issue, unimpeded by public confusion of jurisdictional issues of state versus Federal management of fish and game. When the Legislature did not take such action by an October 1999 Congressional deadline, NMFS recommended that the Council reschedule final action.

The issues surrounding Title VIII of the Alaska National Interest Lands Conservation Act (ANILCA) and the Secretaries of the Interior and Agriculture to implement a joint program to grant a preference for subsistence uses of fish and wildlife resources on public lands has no application to the proposed action to define a subsistence category for Pacific halibut.

In February 2000, the Council revised the alternatives in the draft analysis and rescheduled initial review and final action for April and June 2000, respectively. At the April 2000 meeting, the Council again revised the list of alternatives and rescheduled final action for October 2000.It also requested that its Halibut Subsistence Committee convene in September 2000 to review the public review draft of the analysis and provide recommendations. The committee meeting was scheduled for September 7, 2000.

The alternatives, as revised by the Council in April 2000, are listed below.

ALTERNATIVE 1. Status quo.

ALTERNATIVE 2. Allow the harvest of halibut for subsistence.

OPTION 1. Define subsistence.

Halibut subsistence regulations are needed to allow the continued practice of long-term customary and traditional practices of fishing halibut for food for families in a non-commercial manner for non-economic consumption. Subsistence is defined as 'long-term, customary and traditional use of halibut.'

OPTION 2. Define eligibility (*residency is defined as one calendar year):

Suboption A.
1. Members of Alaska Native Federally-recognized Tribes with customary and traditional use of halibut; and
2. Other permanent rural residents* of communities with customary and traditional use of halibut.

Suboption B. Alaska rural residents* as defined in ANILCA and identified in the table entitled 'Alaska Rural Places and Native Groups with Subsistence Halibut Uses,' and will also include other communities for which customary and traditional findings are developed in the future.

Suboption C.
1. Members of Alaska Native Federally-recognized Tribes with customary and traditional use of halibut.
2. Other permanent rural residents* who have legitimate subsistence needs in communities with customary and traditional use of halibut.

Need will be determined on an individual basis by either:
1. State of Alaska
2. Tribes
3. Co-management authority.

Suboption D. Members of Alaska Native Federally-recognized Tribes with customary and traditional use of halibut.

Suboption E. Members of Alaska Native Federally-recognized Tribes who reside in rural communities with customary and traditional use of halibut. *(This language also may be substituted under Suboptions A, C, or D.)*

OPTION 3. Define legal gear.

Suboption A. Define hand held gear as:
1. Rod and reel gear
2. Spear
3. Hand troll gear

Suboption B. Define hook-and-line gear (including set and hand-held gear) with a range of:
1. 2 hooks;
2. 10 hooks;
3. 30 hooks;
4. 60 hooks.

Suboption C. Allow tribal governments to contract with NMFS to allow proxies to be used by designated fishermen to fish for the community using:
1. 1 - 3 skates of gear, up to 60 hooks each;
2. any gear type

Suboption D. Allow retention of subsistence halibut using commercial gear while IFQ/CDQ fishing.
1. Statewide
2. 4C, 4D, and 4E only
3. Require subsistence fishermen to designate a particular trip as a subsistence trip outside of areas 4C, 4D, and 4E

OPTION 4. Allow the customary and traditional trade of subsistence halibut.

Suboption A. Customary and traditional trade through monetary exchange shall be limited to an annual maximum of:
1. $0;
2. $200;
3. $400;
4. $600.

Suboption B. Customary and traditional trade through non-monetary exchange is allowed with:
1. other Alaska Tribes;
2. any Alaska rural resident;
3. any Alaska resident;
4. anyone.

OPTION 5. Define a daily bag limit of between 2-20 halibut.

Suboption. No bag limits for subsistence halibut.

OPTION 6. Develop co-management agreements with tribal, State, and Federal governments and other entities to collect, monitor, and enforce subsistence harvests and develop local area halibut subsistence use plans in coastal communities.

Alternative 1 is the no action alternative. Current Federal regulations approved by the International Pacific Halibut Commission and the Council and implemented by NMFS do not provide for customary and traditional subsistence practices by residents of rural Alaskan communities. The status quo alternative would continue the current application of halibut non-commercial regulations to subsistence harvests in Alaska. Continued conflict could occur between Federal and state enforcement agencies and rural Alaskans engaged in customary and traditional halibut subsistence practices as result.

Alternative 2 proposes to define halibut subsistence (Option 1), eligibility (Option 2), gear (Option 3), trade (Option 4), bag limits (Option 5), and co-management agreements (Option 6). The eligibility criteria is the most critical element of the proposed action; it is also the most controversial. The number of eligible individuals or communities, combined with the definition of legal gear, will ultimately determine the amount of halibut that can be taken. It is the Council's intent to legitimize established uses and not expand the

subsistence fishery beyond established patterns of use. Therefore, the Council is considering a definition of halibut subsistence that would be applied either through tribal membership, rural residency, or both. Non-tribal members in urban areas are not included in the proposed action.

Option 2, Suboption A defines eligibility through two routes: membership in tribes with customary and traditional uses of halibut, or residency in rural communities with customary and traditional uses of halibut. It would qualify approximately 88,663 persons associated with 118 Alaska Native Tribes with an estimated halibut harvest of 1.5 million lb. In April 2000, the Council modified this suboption by separating it into parts 1 (tribal members) and 2 (other permanent rural residents of the same communities). This change was based on recommendations from public testimony that defined halibut subsistence for tribal members based on recognition of customary and traditional cultural practices, while halibut subsistence for other permanent rural residents would be based on social and economic concerns.

Suboption A (as well as C and D) includes tribal members regardless of where they reside. It includes 5,540 tribal residents of Juneau, Ketchikan, Saxman, Kenai-Soldotna, and Ninilchik, that would be excluded under Suboption B (rural eligibility).

Urban tribal members included and non-Natives excluded under Suboption A.

Community	Native	non-Native	Total
Juneau	**3,462**	23,289	26,751
Ketchikan	**1,296**	6,967	8,263
Kenai-Soldotna	**693**	9,116	9,809
Ninilchik	**89**	367	456
Total	**5,540**	39,739	45,279

Another change made in April 2000 based on a staff recommendation to clarify language then in Suboption A may have inadvertently altered Council intent. Language in the initial review version of the analysis ("in such Native villages") was replaced by "of communities with customary and traditional use of halibut." The tables and discussion in the current and previous versions of the analysis reflect the revised language. This change results in 'fixing' the number of non-Natives to 46,659 rather than 44,412, under all suboptions. The Council may choose to adopt either language and intent since both are discussed in the analysis.

Suboption B is based on determination of rural places with a finding of customary and traditional use of halibut. It would qualify approximately 82,171 Alaska rural residents from 114 coastal communities that had established customary and traditional halibut subsistence practices, with an associated halibut harvest of 1.4 million lb.

Unique rural residents included under Suboption B.

Rural Place*	Alaska Natives	Non-Natives	Total (1995)
Coffman Cove	18	**236**	254
Cold Bay	6	**101**	107
Edna Bay	0	**79**	79
Elfin Cove	1	**47**	48
Gustavus	13	**315**	328
Hollis	3	**103**	106
Hyder	1	**137**	138
Meyers Chuck	4	**31**	35
Pelican	61	**148**	209
Point Baker	0	**62**	62
Port Alexander	2	**96**	98
Port Protection	1	**63**	64
Tenakee Springs	10	**97**	107
Thorne Bay	8	**642**	650
Whale Pass	2	**90**	92
Total	130	**2,247**	2,377

Suboption C is similar to Suboption A, but eligibility for halibut subsistence would be determined on an individual basis by either the State of Alaska, the appropriate tribe, or co-management authority. It would qualify between 42,003 and 88,663 Alaska Natives and other rural residents from 114 communities, with an associated halibut harvest between 636,813 lb and 1.5 million lb. A more complex administrative and appeals system would need to be instituted for individual eligibility determination than for any of the other suboptions. Under this

suboption, the Council must designate the State, the tribes, or co-management authorities to determine need if it does not intend to make these determinations.

Suboption D modified Suboption A to allow the Council to designate halibut subsistence for only Suboption A, Part 1 (tribal only). It would qualify approximately 42,003 persons associated with 118 Alaska Native tribes with an estimated halibut harvest of 636,813 lb. This suboption recognizes the cultural component of halibut customary and traditional uses of halibut by Alaska Natives.

Suboption E, added to the analysis in April 2000, would limit halibut subsistence eligibility to tribal members who reside in communities for which halibut subsistence customary and traditional practices have been identified. This eligibility definition may be substituted for the language under Suboptions A, C, or D. It would limit halibut subsistence eligibility to those Alaska Native tribal members who reside in rural places with halibut customary and traditional use designations. This suboption would exclude tribal members who reside in non-rural places (e.g., Anchorage, Juneau, and Ketchikan) from halibut subsistence fishing off those communities. Another definition may, however, allow tribal members to halibut subsistence fish off the rural communities with which their tribes are associated.

The rural areas identified in the tables in this analysis are based on the State of Alaska Subsistence Board findings. Should the Council adopt the Federal Subsistence Board's March 2000 findings that designated the entire Kenai Peninsula as rural, an additional 45,361 people in the Kenai Peninsula (from the Kenai-Soldotna area, Homer Area, and Seward Area) would be included under Suboption B. Eight hundred eighty eight Kenai Peninsula tribal members are already included under Suboptions A, C, and D (775 Kenaitze Indian tribe, 115 Village of Salamatoff, and 116 Ninilchik Village tribal Members). The Council could also devise its own criteria.
In summary, there are 88,663 persons eligible under Suboption A (tribal plus), of which 42,003 are Alaska Native and 46,659 are non-Natives. Under Suboption B (rural standard), there are 82,171 persons eligible of which 35,512 are Alaska Natives and 46,659 are non-Natives. Under Suboption C (tribal plus with individual determination), up to 88,663 persons may be eligible of which 42,003 are Alaska Native and 46,659 are non-Natives. The 5,540 fewer Alaska Natives eligible under Suboptions B and E compared with the other suboptions are Alaska Native tribal members residing in Juneau, Ketchikan, and the Kenai-

	Suboption				
	A	**B**	**C**	**D**	**E**
	Tribal plus	rural	Tribal plus/individual	Tribal only	rural Tribal
eligible persons	88,663	82,171	42,003 to 88,663	42,003	36,463
Alaska Native Tribes	118		118	118	118
rural communities with halibut C&T		114			114

Soldotna-Ninilchik areas, while Suboptions A, C, and D include them. However, Suboption B includes 550 tribal members and 5,735 non-Natives who are not included under any other suboption. Suboption D (tribal only) would qualify approximately 42,003 tribal members only. Suboption E (rural tribal only) would qualify tribal members who reside in communities with customary and traditional use of halibut, or 35,512 tribal members.

None of the alternatives is expected to result in a "significant regulatory action" as defined in E.O. 12866.

1.0 INTRODUCTION

This document assesses the potential biological, social and economic impacts of a regulatory action to develop halibut subsistence regulations for Alaskan rural communities to legitimize current halibut subsistence uses. A number of Federal and state agencies and divisions have management responsibilities for halibut. It has been prepared through the cooperative efforts of staff from the North Pacific Fishery Management Council, International Pacific Halibut Commission, National Marine Fisheries Service, NOAA General Counsel, State of Alaska Department of Fish and Game Commercial Fisheries Management and Development, Sportfish, and Subsistence divisions, and U.S. Fish and Wildlife Service.

The domestic fishery for halibut in and off Alaska is managed by the International Pacific Halibut Commission (IPHC) as provided by the "Convention Between the United States and Canada for the Preservation of the Halibut Fishery of the Northern Pacific Ocean and the Bering Sea" (Convention) signed at Washington March 29, 1979, and the Northern Pacific Halibut Act of 1982 (Halibut Act). The Convention and the Halibut Act authorize the respective North Pacific Fishery Management Council (Council) established by the Magnuson-Stevens Act to:

> develop regulations governing the United States portion of Convention waters, including limited access regulations, applicable to nationals or vessels of the United States, or both which are in addition to and not in conflict with regulation adopted by the Commission. Such regulation shall only be implemented with the approval of the Secretary, shall not discriminate between residents of different States, and shall be consistent with the limited entry criteria set forth in Section 303(b)(6) of the Magnuson Act. If it becomes necessary to allocate or assign halibut fishing privileges among various United States fishermen, such allocation shall be fair and equitable to all such fishermen, based upon the rights and obligation in existing Federal law, reasonable calculated to promote conservation, and carried in such manner that no particular individual, corporation, or other entity acquires an excessive share of the halibut fishing privileges...[Halibut Act]

In general, the language in the Magnuson-Stevens Act, the Halibut Act and the Convention have been interpreted to assign to the Council the duty to advise the Secretary of Commerce on halibut management issues concerning allocations between various users of the halibut resources in and off waters of Alaska. It is under this authority that the Council is considering alternatives to recognize and manage the subsistence halibut fishery. These acts, coupled with Executive Orders 12866 and 12962 and the National Environmental Policy Act (NEPA), mandate that certain issues are examined before a final decision is made. These analytical requirements are addressed in this document, the Environmental Assessment/Regulatory Impact Review/Initial Regulatory Flexibility Analysis (EA/RIR/IRFA).

The Northern Pacific Halibut Act of 1982, P.L. 97-176, 16 U.S.C. 773 c (c) authorizes the regional fishery management councils having authority for the geographic area concerned to develop regulations governing the Pacific halibut catch in U.S. waters which are in addition to but not in conflict with regulations of the International Pacific Halibut Commission. While the IPHC has primary authority to manage the halibut resource for biological conservation purposes, the Council has authority to recommend policies affecting halibut resource allocation among U. S. fishermen in the maritime and coastal waters of Alaska and in the ocean waters over which the U.S. exercises fishery management jurisdiction. The Council does not have a fishery management plan (FMP) for halibut, however, the Council developed a limited access system involving individual fishing quotas (IFQs) and community development quotas (CDQs) for the halibut fishery. This system is implemented by Federal regulations under 50 CFR part 679 under authority of the Magnuson Fishery Conservation and Management Act of 1975, P.L. 94-265, 16 U.S.C. 1801. USFWS also has jurisdiction over halibut for public lands. USFWS determinations are listed in Appendix I.

Federal regulations for Pacific halibut are found in 50 CFR part 300 and 50 CFR part 679, which were issued under the authority of the Magnuson Act and the Halibut Act, respectively. Magnuson Act and Halibut Act

regulations recommended by the Council and IPHC, respectively, describe Pacific halibut commercial and sportfish regulations. These include regulatory areas, licensing vessels, fishing periods, closed periods, catch limits, size limits, bag limits, logs, and sport fishing restrictions. Federal regulations recommended by the Council describe the IFQ and CDQ commercial fisheries off Alaska. Currently, a subsistence category for Alaska waters has not been defined in Federal regulations.

Sportfishing under 50 CFR Part 300, Subpart E has been interpreted to describe all halibut fishing other than commercial and treaty Indian ceremonial and subsistence fishing. This would include recreational sport, guided sport (charter boat), personal use, and subsistence fishing. Sportfishing is limited to a single line with no more than two hooks attached, or a spear. The season is limited from February 1 through December 31. The daily bag limit is two halibut of any size per day per person. State regulations for sportfish, personal use and subsistence users are described in Section 5.

The lack of explicit regulations defining legal subsistence takes has led to inclusion of subsistence (in practice) under the sport fish regulations. Limitation of subsistence harvests to the sport fish gear and bag limits has resulted in conflicts with customary and traditional practices of halibut harvests by Alaska Native tribal members in coastal communities. These practices are described in detail in Section 3.

1.1 Purpose of and Need for the Action

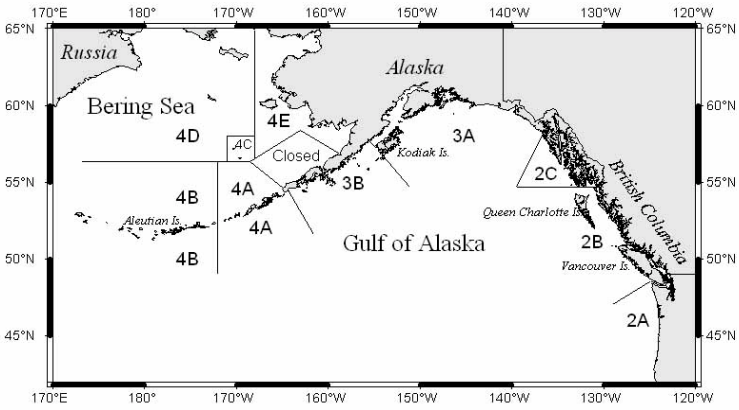


Figure 1.1. IPHC regulatory areas.

Federal regulations do not reflect the customary and traditional use of halibut for subsistence by Alaska Natives in rural communities. The purpose of this EA/RIR/IRFA is to develop regulations to allow for the legal harvest of halibut for subsistence use in the Bering Sea/Aleutian Islands and Gulf of Alaska (Figure 1.1). First, subsistence halibut harvests are currently included within Federal regulations that apply to sportfishing, largely because the subsistence fishery's pattern of use has not been adequately documented. Federal regulations limit all non-commercial uses of halibut in Alaska, including recreational, personal use and subsistence fisheries, to two fish per person per day, caught on a single line with a maximum of two hooks or a spear from February 1 through December 31.

During 1996, the Council received a number of requests from Alaska Native tribal organizations to legitimize established halibut subsistence practices. The Council received a letter from Sen. Ted Stevens, dated May 15, 1996, referring to the Council a resolution by the Central Council of Tlingit and Haida Indian tribes of Alaska to 'recognize and acknowledge halibut as a customary and traditional subsistence resource, and to assure subsistence harvesting of halibut by Alaska Natives is protected.'

In July 1996, the Coastal Villages Fishing Cooperative (CVFC) requested a meeting with Council, NMFS, and NOAA staff in Bethel, Alaska to discuss halibut IFQ and CDQ enforcement. The meeting occurred in August, 1996 and information was exchanged regarding halibut commercial fishing regulations and traditional halibut subsistence practices. Some Western Alaska Native fishermen routinely retain sublegal halibut harvested along with commercial Community Development Quota (CDQ) halibut for subsistence purposes. The parties agreed to refer the conflict between traditional subsistence practice and existing fishing regulations to the Council.

CVFC, the Southeast Native Commission, the Central Council of Tlingit and Haida Indian Tribes of Alaska, and the Aleutian Pribilof Islands Association submitted a request, dated September 13, 1996, to NMFS to resolve enforcement issues related to subsistence halibut fishing. The letter referred to a State enforcement case in Southeast Alaska where three Angoon fishermen were cited for using illegal gear (longline) to harvest halibut for subsistence. That case was dismissed in Superior Court in January 1997. The State elected not to appeal the *Hunter* decision.

Second, subsistence harvest estimates provided to the International Pacific Halibut Commission may not adequately account for all subsistence removals due to lack of adequate monitoring, reporting, and estimation processes. Methods for estimating halibut subsistence removals were reevaluated in 1993. IPHC has used the estimate of 228,000 lb of halibut for 1995-97, derived from ADF&G Subsistence Division household surveys, to account for Alaskan subsistence halibut removals. For 1998-1999, IPHC has used 430,000 lbs. There currently is no satisfactory system for assessing the size and trends in the subsistence fishery in rural Alaska, nor in the immediate future, funds to do so. Subsistence harvests may not be adequately accounted in the International Pacific Halibut Commission calculations of total halibut removals. Co-management agreements would enhance data collection of subsistence harvests. Despite the lack of complete subsistence harvests, all such harvests are estimated to account for less than one percent of total halibut removals.

A management proposal to define halibut subsistence was first developed to address a conflict between the IFQ/CDQ regulations and customary and traditional practices of Alaska Natives in IPHC regulatory Area 4E, whereby halibut CDQ fishermen were retaining undersized halibut for personal use. In September 1996, the Council received a NMFS report on enforcement issues related to halibut subsistence and designated a halibut committee to advise the Council on management of subsistence halibut harvests. In October 1996, staff from the Council, NMFS Enforcement, NOAA General Counsel, and Alaska Department of Fish and Game Subsistence Division met with Alaska Native tribal representatives to exchange information on the Council process for developing fishing regulations and tribal subsistence customs. Agency staff met in November 1996 and provided a report to the Council at its December 1996 meeting on numerous management issues related to development of halibut subsistence regulations.

At its December 1996 meeting, the Council named seven representatives of Native Alaskan Tribes to the Halibut Subsistence Committee and named Council member Robin Samuelsen as Chairman. The committee met in January 1997, and provided recommendations for the development of halibut subsistence regulations in its report to the Council in February 1997. Proposals identical to that submitted by CVFC were submitted by the Traditional Councils of Tooksook Bay, Kipnuk, Nightmute, and Newtok to the Council's Halibut Subsistence Committee. Resolutions by the Central Council of Tlingit and Haida Indian Tribes of Alaska and the Southeast Native Subsistence Commission were also submitted to the committee.

At its February 1997 meeting, the Council initiated preparation of an EA/RIR for a regulatory amendment to allow the legal harvest of halibut for subsistence in rural communities to conform with state and Federal statutes that provide for the opportunity for the continued existence of these traditional cultures and economies.

In April 1997, the Council approved a draft EA/RIR/IRFA with some changes for public review. In June 1997, the Council took final action on one part of the proposed action to recommend the retention of undersized halibut in the Area 4E Community Development Quota fishery. That measure took effect June 4, 1998, was renewed by the IPHC in January 2000, and sunsets on December 31, 2001. The Council did not recommend a sunset, but the IPHC wanted to ensure an adequate data collection program. Final action on the larger issues of defining eligibility, legal gear, customary and traditional trade, bag limits, and cooperative management agreements was scheduled for February 1998 and then rescheduled for February 1999.

The Council deferred action on defining halibut subsistence while the State of Alaska Legislature considered amending the State Constitution to become compliant with Federal law related to management of fish and

game on Federal lands. The dual management issue does not affect management of Pacific halibut (except in a few small areas of the National Park lands), however, the Council chose to postpone its action to allow the State to address its management issue, unimpeded by public confusion of jurisdictional issues of state versus Federal management of fish and game. When the Legislature did not take such action by an October 1999 Congressional deadline, NMFS recommended that the Council reschedule final action. In February 2000, the Council revised the alternatives in the draft analysis and rescheduled initial review and final action for April and June 2000, respectively. At the April 2000 meeting, the Council again revised the list of alternatives and rescheduled final action for October 2000.It also requested that its Halibut Subsistence Committee convene in September 2000 to review the public review draft of the analysis and provide recommendations. The committee meeting was scheduled for September 7, 2000.

1.1.1 Defining 'Subsistence'

Given the nature of public and government debate regarding subsistence in Alaska, it is important to differentiate the meanings of "subsistence" before analyzing alternatives. In general, "subsistence" refers to fishing and hunting for wild foods by Alaska Natives and other residents of rural Alaska areas, as characterized in this ethnographic description in Wolfe 1993b:

> In 1990 there were about 52,000 Alaska Natives living in somewhat more than 250 rural settlements (commonly called "villages") in Alaska, including Tlingit, Haida, Tsimshian, Aleut, Alutiiq, Yup'ik, Inupiat, and several Athapaskan tribal groups. The economies, cultures, and spiritual well being of Alaska's indigenous societies are heavily dependent upon customary and traditional fishing and hunting practices (called "subsistence" in Alaska) (Wolfe and Walker 1987). Fishing and hunting for subsistence uses are mainstays of the economy, culture, and way of life of most contemporary Alaska Native villages. The annual subsistence harvest in rural areas is about 35-45 million pounds of usable wild foods, which come to about a pound of food per person per day for the rural population (this includes about 38,000 non-Natives).
>
> Subsistence activities of Alaska Native are usually conducted by traditional, kinship-based groups using small-scale, efficient technologies (e.g., gill nets, seine nets, fish wheels, rifles, skiffs, outboard motors, and snowmachines). The food product is preserved by traditional, labor-intensive methods including air drying, smoking, freezing, salting, and fermenting. Traditional foods are distributed along non-commercial networks of sharing and exchange and consumed primarily by families in rural areas. Fishing and hunting occur in traditional areas following customary principles of the local society… (cf., Alaska Department of Fish and Game, Division of Subsistence (1992) for materials on contemporary subsistence systems of Alaska Native villages). (Wolfe 1993b:13)

Wild food harvests contribute to the food supply of most rural places in Alaska, as documented by surveys by the Division of Subsistence and analyzed by Wolfe and Walker (1987:68):

> The statewide survey indicates that subsistence harvests are a prominent part of the economy and social welfare of most rural Alaska regions. Subsistence productivity is substantial in most areas except in the four large urban population centers of Anchorage, Fairbanks, Juneau, and the Matanuska-Susitna Borough. (Wolfe and Walker 1987:68)

Subsistence patterns conducted by Alaska Native groups can be differentiated from the subsistence patterns by non-Natives in Alaska, according to Smith and Kancewik (1995):

> For Alaska Native tribal members, subsistence is a Native cultural tradition, an integrated pattern of tribal community life and the substance of Native self-definition. It is a matter of inherent historical, cultural identity. Non-Native subsistence, for the most part, is the opposite; an individual activity governed by the rules affecting individual rights.

> To participate in what Alaska Natives mean when they speak of subsistence, then, a non-Native would need to become a participating member of a Native community. Long-term non-Native residents, for example, spouses of members, are often admitted to membership. Transients, such as school teachers, or government agency personnel, most often are not.
>
> This is not to say that non-Natives do not engage in what they perceive to be subsistence: the taking of fish and game for personal sustenance. This is also not to say that there are families who have chosen to live this way for several generations, or that there are not individual non-Natives who have come to identify themselves with this minimalist way of life, finding in it a Zen sort of richness. But it is to say that Native subsistence and non-Native subsistence are not the same thing, and that both are entitled to be regulated in a manner that accommodates them.

The implication for management is directly related to one's interpretation of the meaning of subsistence. The Council's final choice for determining eligibility under Alternative 2, Option 2 will directly affect the outcome of the analysis of the remaining management options. Eligibility criteria will have repercussions on gear restrictions and barter.

The cultural context will also define the kinds of regulations that will be applicable to subsistence users. The Halibut Subsistence Committee identified some traditional subsistence practices unique to certain rural communities that are inconsistent with state and Federal regulations. Where these customs occur, regulations may be written to exempt those communities. Western Alaska Native communities traditionally use three hooks per line (state regulations permit three hooks per line which are in conflict with Federal regulations permitting only two hooks per line) . Some Western Alaskan Natives believe that returning hooked fish to the water spiritually damages the stock. Southeast Natives use a variety of gear, including an 1,800 ft skate with up to 100 hooks. Southeast Alaska Natives have a tradition of 'sale' of subsistence-caught fish as one means of distributing subsistence foods among tribal members, along with sharing and barter. Most Alaska Native communities have a tradition of trade and barter of halibut. Compensating subsistence fishermen with cash for gas money is considered barter, a traditional practice.

1.1.2 Subsistence Laws

The history of subsistence laws in Alaska is complicated. Village, regional, and multi-regional authorities have been formed by subsistence users to manage local resources (Wolfe 1993b). However, with few exceptions, the jurisdiction of these authorities are not recognized by the state or Federal government because aboriginal rights to hunt and fish were extinguished by the Alaska National Interest Lands Conservation Settlement Act (ANCSA) in 1971. State and Federal laws were passed in 1978 and 1980, respectively, that required these governments to pass subsistence fishing and hunting regulations to provide for subsistence users, and gave priority to subsistence uses over commercial or recreational uses.

The Federal law contained higher standards of protection, requiring subsistence regulations to impose 'the least adverse impacts' on customary and traditional subsistence practices (cf., John vs. State of Alaska; Kwethluk vs. State of Alaska). The Federal bill initially proposed a Native-only subsistence preference, but modified it to "rural residents" to appease state interests, but with the stated understanding that rural residents were mostly Alaska Natives (Kancewick and Smith 1991). Alaska's rural population as defined by the Boards of Game and Fisheries is split almost evenly between Alaska Native and non-Natives. The rural compromise in state and Federal laws recognized that most subsistence practices by Alaska Natives would be covered under a 'rural' designation, while including fishing and hunting by non-Natives in rural places as well (R. Wolfe, pers. commun.)

The state subsistence statute had to provide a 'reasonable opportunity' for subsistence uses to occur. Some changes have been made in the development of subsistence laws; a variety of court cases have thrown the

legality of subsistence statutes into question and substantially disrupted fish and game management in Alaska (Kancewick and Smith 1991). After 1989, when portions of state law were found to be unconstitutional, the Federal government stepped in to take control of subsistence management on Federal lands because state management fell short of Federal requirements of protecting subsistence. These legal problems remain unresolved.

While legal challenges have led to confusion of rights and responsibilities for subsistence management (Kancewick and Smith 1991), in the case of subsistence regulations **for Pacific halibut there is no debate that**: (1) Federal law does allow for rural preference (and Native preference); (2) the State Constitution does not allow for a rural preference; (3) Title VIII of ANILCA is generally not applicable to marine navigable waters of the U.S. (John vs. State of Alaska); and (4) State authority to regulate fishing for Pacific halibut in Convention waters is preempted by the Convention Between the United States and Canada for the Preservation of the Pacific Halibut Fishery of the Northern Pacific Ocean and the Bering Seas and the Northern Pacific Halibut Act, 16 U.S.C §§ 773-773k. **Therefore, it is important for the reviewer to understand that the issues surrounding Title VIII of the Alaska National Interest Lands Conservation Act (ANILCA) and the Secretaries of the Interior and Agriculture to implement a joint program to grant a preference for subsistence uses of fish and wildlife resources on public lands has no application to the decision facing the Council in its definition of subsistence for Pacific halibut**. The Council may legally choose from among the management options presented below. The Council may choose to limit halibut subsistence eligibility based on rural or tribal preferences.

1.2 Alternatives Considered

1.2.1 Alternative 1: No Action

Current Federal regulations developed by the International Pacific Halibut Commission and implemented by the National Marine Fisheries Service do not provide for customary and traditional subsistence practices by residents of rural Alaskan communities. The status quo alternative would continue the current application of halibut sportfishing regulations to subsistence harvests in Alaska. Continued conflict could occur between Federal and state enforcement agencies and rural Alaskans engaged in customary and traditional halibut subsistence practices, although these conflicts were identified beginning in 1996 with increased enforcement of IFQs and CDQs in rural communities.

1.2.2 Alternative 2: Allow the harvest of halibut for subsistence.

Alternative 2 would result in Federal regulations to specifically allow the subsistence harvest of halibut. The six options described below allow the Council to determine the effects of different options for defining subsistence, eligibility, legal gear, bag limits, customary and traditional trade, and reporting requirements.

1.2.2.1 Option 1. Define subsistence.

Halibut subsistence regulations are needed to allow the continued practice of long-term customary and traditional practices of fishing halibut for food for families in a non-commercial manner for non-economic consumption. Subsistence is defined as 'non-commercial fishing for food.'

Option 1 recognizes that halibut is taken primarily for food and not for recreational uses by tribal members regardless of where in the State they live, or by rural residents. The Council included the above definition in the analysis, which was recommended to them by its Halibut Subsistence Committee. However, the final definition of subsistence will be developed by the Council's final action. The recommended language may remain, but the Council may also choose to further refine the definition since it may as easily be used to define personal use.

1.2.2.2 Option 2. Define eligibility (*residency defined as one calendar year):

Suboption A.
1. Members of Alaska Native Federally-recognized tribes with customary and traditional use of halibut.
2. Other permanent rural residents* of communities with customary and traditional use of halibut.

Suboption B. Alaska rural residents* as defined in ANILCA and identified in the table entitled 'Alaska Rural Places and Native Groups with Subsistence Halibut Uses,' and will also include other communities for which customary and traditional findings are developed in the future.

Suboption C.
1. Members of Alaska Native Federally-recognized tribes with customary and traditional use of halibut.
2. Other permanent rural residents* who have legitimate subsistence needs in communities with customary and traditional use of halibut.

Need will be determined by:
1. State of Alaska
2. Tribes
3. Co-management authority

Suboption D. Members of Alaska Native Federally-recognized tribes with customary and traditional use of halibut.

Suboption E. Members of Alaska Native Federally-recognized tribes who reside in rural communities with customary and traditional use of halibut. *(This language also may be substituted under Suboptions A, C, or D.)*

Alternative 2 proposes to define halibut subsistence (Option 1), eligibility (Option 2), gear (Option 3), trade (Option 4), bag limits (Option 5), and co-management agreements (Option 6). The eligibility criteria is the most critical element of the proposed action; it is also the most controversial. The number of eligible individuals or communities, combined with the definition of legal gear, will ultimately determine the amount of halibut that can be taken. It is the Council's intent to legitimize established uses and not expand the subsistence fishery beyond established patterns of use. Therefore, the Council is considering a definition of halibut subsistence that would be applied either through tribal membership, rural residency, or both. Non-tribal members in urban areas are not included in the proposed action.

Suboption A (and D and E) is based on a modified original recommendation from the Council's Halibut Subsistence Committee; it currently reflects the language recommended to the Council by the Halibut Subsistence Working Group in public testimony in April 2000. The original Suboption A language (tribal member only) was recommended to the Council by the Halibut Subsistence Committee to recognize that Alaska Native tribal members are most affected under the status quo. NMFS Enforcement contacts with Alaska Native tribal members in Western and Southeast Alaska raised the awareness of both Natives and Federal fishery management agencies regarding the conflict between customary Alaska Native subsistence practices and Federal commercial and sport fishing regulations. Continued enforcement of current commercial and sport fishing regulations conflicts with the practice of aboriginal customs of providing food for Alaska Native communities.

Suboption B uses a rural eligibility standard. This is similar to the rural eligibility standard found in ANILCA. The list of "Alaska Rural Places and Alaska Native Groups" was developed by the Alaska Board of Fisheries and Game. Rural places are defined as places outside the boundaries of non-subsistence areas,

as determined by the Alaska Joint Board of Fisheries and Game (AS 16.05.258(c)). In state statute, a rural area means "a community or area of the state in which the noncommerical, customary and traditional use of fish or game for personal or family consumption is a principal characteristic of the economy of the community or area" (AS 16.05.940(27)). Suboption B, "Alaska rural residents as defined in ANILCA and identified in the table entitled 'Alaska Rural Places and Native groups with Subsistence Halibut Uses,' will also include other communities for which customary and traditional findings are developed in the future." Suboption B contains a "rural" standard for eligibility, rather than a distinction based on tribal membership.

The EA/RIR addresses the effects of proposed Federal regulations for halibut subsistence on Alaskan rural residents. The Council approved five eligibility options for Alaska rural residents for analysis. In its original recommendations to the Council, the Halibut Subsistence Committee proposed the list of Alaska rural places and Alaska Native groups in areas with subsistence halibut uses that were developed by the Alaska Board of Fisheries. The committee further recommended that the Council develop an administrative process for those groups not already approved to petition the Council for eligibility. Suboption B includes similar recommendations. Suboption C would require a separate application/adjudication process for determining individual eligibility. Suboptions D and E were added by the Council in April 2000. A number of changes were made to these suboptions since the analysis was initiated in 1997. Pervious versions of the initial and final review documents should be reviewed for a full record of Council consideration.

> "Subsistence uses may be defined for persons living in particular areas, since such uses only occur in a local area. This would require that subsistence users in one part of the state stay in those areas which customarily are their fishing areas. Because for many Alaskans, particularly Native tribal members, 'subsistence uses' have meaning only within the context of an identifiable, territorially defined group, subsistence regulations may be developed by reference to that group's customs and membership to be eligible for subsistence halibut. Where a group's culture is inextricably tied to subsistence use, any member of the group can be assumed to participate, as a harvester, processor, or recipient of sharing or barter. That is, membership is defined by those who participate.
>
> While it is obvious Native villages and groups are most likely to benefit from this approach, the benefit are not tied to Native people. There may very well be non-Native groups, especially in isolated communities, who too can establish themselves as an identifiable group engaged in customary and traditional uses within a specific area, as currently defined by the Board of Fish. It is appropriate, then, to tailor subsistence regulations to meet the customs and traditions of identifiable groups practicing a subsistence way of life." (adapted from Smith and Kancewick 1995).

Alaska Statute 16.05.258 lists the criteria used by the State of Alaska Subsistence Board to determine eligibility (see box).

Sec. 16.05.258. Subsistence use and allocation of fish and game.

c) The boards may not permit subsistence hunting or fishing in a non-subsistence area. The boards, acting jointly, shall identify by regulation the boundaries of non-subsistence areas. A non-subsistence area is an area or community where dependence upon subsistence is not a principal characteristic of the economy, culture, and way of life of the area or community. In determining whether dependence upon subsistence is a principal characteristic of the economy, culture, and way of life of an area or community under this subsection, the boards shall jointly consider the relative importance of subsistence in the context of the totality of the following socio-economic characteristics of the area or community:

(1) the social and economic structure;
(2) the stability of the economy;
(3) the extent and the kinds of employment for wages, including full-time, part-time, temporary, and seasonal employment;
(4) the amount and distribution of cash income among those domiciled in the area or community;
(5) the cost and availability of goods and services to those domiciled in the area or community;
(6) the variety of fish and game species used by those domiciled in the area or community;
(7) the seasonal cycle of economic activity;
(8) the percentage of those domiciled in the area or community participating in hunting and fishing activities or using wild fish and game;
(9) the harvest levels of fish and game by those domiciled in the area or community;
(10) the cultural, social, and economic values associated with the taking and use of fish and game;
(11) the geographic locations where those domiciled in the area or community hunt and fish;
(12) the extent of sharing and exchange of fish and game by those domiciled in the area or community;
(13) additional similar factors the boards establish by regulation to be relevant to their determinations under this subsection.

Suboption D modified Suboption A to allow the Council to designate halibut subsistence for only Suboption A, Part 1 (Alaska Natives only). This suboption recognizes the cultural component of halibut customary and traditional uses of halibut by Alaska Natives.

Suboption E, added to the analysis in April 2000, would limit halibut subsistence eligibility to tribal members who reside in communities for which halibut subsistence customary and traditional practices have been identified. This eligibility definition may be substituted for the language under Suboptions A, C, or D. It would limit halibut subsistence eligibility to those Alaska Native tribal members who reside in rural places with halibut customary and traditional use designations. This suboption would exclude tribal members who reside in non-rural places (e.g., Anchorage, Juneau, and Ketchikan) from halibut subsistence fishing off those communities. Another definition may, however, allow tribal members to halibut subsistence fish off the rural communities with which their tribes are associated.

1.2.2.3 Option 3. Define legal gear.

Suboption A. Define hand held gear as:
1. Rod and reel gear
2. Spear
3. Hand troll gear

Suboption B. Define hook-and-line gear (including set and hand-held gear) with a range of:
1. 2 hooks;
2. 10 hooks;
3. 30 hooks;
4. 60 hooks.

Suboption C. Allow tribal governments to contract with NMFS to allow proxies to be used by designated fishermen to fish for the community using:
1. 1 - 3 skates of gear, up to 60 hooks each;
2. any gear type

Suboption D. Allow retention of subsistence halibut using commercial gear while IFQ/CDQ fishing.
1. Statewide
2. 4C, 4D, and 4E only
3. Require subsistence fishermen to designate a particular trip as a subsistence trip outside of areas 4C, 4D, and 4E

Current Federal regulations for non-commercial fishing limit legal halibut gear to rod-and-reel, with one line and a maximum of two hooks or a spear. An exemption for Area 4E community development quota (CDQ) commercial fishermen occurs in Federal regulation, which allows retention of undersized (<32 inch) halibut as take-home fish while commercial fishing.

State of Alaska regulations exist separately for sport, personal use, and subsistence. State sportfishing regulations restrict legal gear to rod and reel only, one line per person. State personal use regulation in some non-subsistence areas (e.g., Juneau and Ketchikan, 5 AAC 77.676) restrict legal gear to a single hand-held line with a maximum of two hooks. Areas with customary and traditional use findings for halibut have subsistence regulations that restrict gear to a single hand-held line (or line operated by hand) with a maximum of two hooks (3 hooks in the Yukon-Kuskokwim area).

The analysis allows the Council to define leagal gear by management area. Suboption A would legalize gear that has been reported through public testimony to be used for subsistence halibut fishing. It would include rod-and-reel gear (with up to three hooks) that is widely used in rural coastal communities for taking halibut for family use. Halibut are taken more occasionally as an incidental harvest with hand troll gear operated for subsistence salmon fishing. The use of spears for taking flounders and halibut is relatively uncommon, though spears are sometimes used in shallow bays in places like Mekoryak on Nunivak Island.

Suboption B would allow an individual to use one skate of gear up to 1,800 ft long (not including the buoy line), with hooks set 18-20 ft apart, with a legibly marked buoy. Public testimony reported its use as traditional gear fo halibut subsistence fishing in Southeast Alaska. The Council has proposed to limit hooks per skate to between 2 and 60 hooks.

Suboption C would allow 'designated' fishermen to fish halibut for the community using: (1) up to 3 skates, with up to 60 hooks per skate or (2) any gear type. The designated fisherman might hold in hand the designated "proxy" for others in that community.

Suboption D was added to the analysis in December 1999 in response to public testimony. It expands the current exemption for Area 4E CDQ halibut fishermen to all halibut fisherman in all IPHC areas for retention of any size halibut using legal commercial gear. In April 2000, the Council added three choices under Suboption D to allow retention of halibut of any size to be retained by a person deemed eligible for halibut subsistence under Option 2 who is also a valid halibut commercial (either IFQ or CDQ) fishermen in either: (1) all waters off Alaska; (2) IPHC Areas 4C, 4D, and 4E only; or (3) subsistence fisherman who also holds commercial halibut IFQs or CDQs in IPHC Areas 4C, 4D, and 4E would be required to notify NMFS that a particular trip os for subsistence and therefore any poundage should not be deducted from the corresponding IFQ or CDQ account. It would require rulemaking denoting the requirements for having subsistence and commercial halibut during the same trip. Under Item 3, commercial fishermen in Areas 2C, 3A, 3B, 4A, and 4B would not be allowed to retain subsistence halibut.

1.2.2.4 Option 4. Allow the customary and traditional trade of subsistence halibut.

Suboption A. Customary and traditional trade through monetary exchange shall be limited to an annual maximum of:

1) $0;
2) $200;
3) $400;
4) $600.

Suboption B. Customary and traditional trade through non-monetary exchange is allowed with:

1) other Alaska tribes;
2) any Alaska rural resident;
3) any Alaska resident;
4) anyone.

This option would allow for the customary and traditional trade of subsistence halibut. Suboption A allows for the trade ("barter") of subsistence caught halibut, limited to an annual amount set by the Council, such as $200, $400, or $600. Public testimony has identified that cash is a traditional barter exchange for subsistence fish. The $0 choice would prohibit monetary exchange for halibut. Suboption B identifies the classes of individuals with whom the customary and traditional trade of subsistence caught halibut for non-monetary exchange.

1.2.2.5 Option 5. Define a daily bag limit of between 2-20 halibut.

Suboption. No bag limits for subsistence halibut.

Option 5 would define daily bag limits between 0 and 20 for halibut subsistence purposes. Bag limits are a traditional management tool for limiting harvest in sport fisheries.

1.2.2.6 Option 6. Develop co-management agreements with tribal, State, and Federal governments and other entities to collect, monitor, and enforce subsistence harvests and develop local area halibut subsistence use plans in coastal communities.

Under Option 6, tribal, state, Federal governments, and other entities would develop cooperative agreements to collect necessary harvest records. In addition to data collection, these agreements could be used to identify eligible users and legal gear in rural communities. NOAA General Counsel has recommended that co-management agreements not be used to manage this fishery at this time. However, a "co-operative agreement" reporting vehicle would be necessary. The latter language was included under Option 6 until the Council amended the language in June 2000.

2.0 PACIFIC HALIBUT FISHERIES

Table 2.1 Pacific halibut removals by area and category for 1999 (1,000 pounds) (Source:IPHC)

	2C	3A	3B	4	Total
Commercial	10,202	25,287	13,873	11,878	61,240
Sport	1,830	5,243	22	108	7,203
Legal-sized Bycatch	230	1,600	880	3,460	6,170
Sublegal-sized Bycatch	123	1,287	786	3,712	5,908
Personal Use	170	74	20	170	434
Legal-sized Wastage	72	101	69	107	349
Sublegal-sized Wastage	162	421	253	155	991
Total	12,789	34,013	15,903	19,590	82,295

Three major cultural use traditions occur in Alaska for halibut: commercial, sport, and subsistence. The distinctions between them are clouded by differing legal and cultural interpretations of subsistence by both resource managers and users, although current gear restrictions may be used to post facto assign a user category to a landing. The IPHC does not have a formal regulatory definition of subsistence or retained catch, however, it does attempt to track subsistence under a personal use category, leaving only sport harvests under the sportfishing category. It deducts separate estimates for "personal use" (434,000 lb in 1999) and sport fishing (7,203,000 lb in 1999) in Alaska (Table 2.1) (IPHC 1999).

A current description of the biology of the Pacific halibut is in IPHC (1998). A current description of the stock assessment and research activities is in IPHC (1999) and Williams (1999). Pacific halibut removals totaled 82 million pounds in Alaska in 1999.

2.1 Commercial Fishery

A summary of the Individual Fishing Quota (IFQ) program for the halibut longline fisheries off Alaska can be found in Pautzke and Oliver (1997). The status of the program at the end of 1998 is summarized in Smith (1999) and Alaska Commercial Fisheries Entry Commission (CFEC) (1999a). A series of reports also by CFEC assess the holdings of limited entry permits, QS holdings, and gross earnings on Gulf of Alaska communities with the purpose of evaluating how coastal communities had fared under the IFQ program (1999b). The following summary provides some detail from the end of year - 1998 CFEC report (1999a).

The halibut target commercial fishery has been in existence for over 100 years. The 1990s have seen a dramatic change in the management regime in the U.S. In 1995, the U.S. implemented an IFQ program, in which each licensed fisherman was given a share of the annual catch limit based on the individual's past production. It has resulted in much longer seasons, currently March 15th through November 15th, replacing the 24-hour "derby" fisheries. It has also kept catches within the prescribed commercial limits. The Alaska commercial quota is 53 million lb in 2000. An additional 3 million lb are allocated to the Community Development Quota (CDQ) Program implemented to provide access to this fishery for Western Alaskan communities. The Metlakatla Indian Community also harvested 35,000 lb in 1999 under an agreement with the Department of Interior Bureau of Indian Affairs (Appendix II).

Commercial catch limits (quotas) have been used by the IPHC to control fishing mortality since 1932. Table 2.2 shows the catch limits by area for 1977-99 in pounds, round weight. Since 1977, the total commercial

Table 2.2. Catch limits during 1977-2000 for the commercial fishery for Pacific halibut. Catch limits for Area 2A include both the treaty and non-treaty commercial fisheries, but excludes the ceremonial-&-subsistence fishery.

					MILLIONS OF POUNDS, NET WEIGHT						
Year	**Area 2**			**Area 3A & 3B**	**Area 3C**	**Area 4**					**Total**
1977	11.000			11.000	no limit	no limit					22.00
1978	9.000			11.000	no limit	no limit					20.00
	Canadian waters		**U.S. Waters**								
1979	5.40		3.60	11.00	no limit	no limit					20.00
1980	6.10		3.20	10.00		1.00					20.30
	Area 2A	**Area 2B**	**Area 2C**	**Area 3A**	**Area 3B**						
1981	0.20	5.40	3.40	11.00	2.00	1.00					23.00
1982	0.20	5.40	3.40	14.00	3.00	1.50					27.50
						Area 4A	**Area 4B**	**Area 4C**	**Area 4D**	**Area 4E**	
1983	0.20	5.40	3.40	14.00	5.00	1.20	0.80	0.40	0.20	closed	30.60
1984	0.30	9.00	5.70	18.00	7.00	1.20	1.00	0.40	0.40	0.05	43.05
1985	0.50	10.00	9.00	23.00	9.00	1.70	1.30	0.60	0.60	0.05	55.75
1986	0.55	11.20	11.20	28.10	10.30	2.00	1.70	0.60	0.70	0.05	66.40
1987	0.55	11.50	11.50	31.00	9.50	1.75	1.75	0.60	0.60	0.08	68.83
1988	0.48	12.50	11.50	36.00	8.00	1.90	2.00	0.70	0.70	0.10	73.88
1989	0.43	10.00	9.50	31.00	8.50	1.80	1.90	0.60	0.60	0.10	64.43
1990	0.32	7.80	8.00	31.00	7.20	1.50	1.50	0.50	0.50	0.10	58.42
1991	0.28	7.40	7.40	26.60	8.80	1.70	1.70	0.60	0.60	0.10	55.18
1992	0.41	8.00	10.00	26.60	8.80	2.30	2.30	0.80	0.80	0.13	60.14
1993	0.38	10.50	10.00	20.70	6.50	2.02	2.30	0.80	0.80	0.12	54.12
1994	0.37	10.00	11.00	26.00	4.00	1.80	2.10	0.70	0.70	0.10	56.77
1995	0.29	9.52	9.00	20.00	3.70	1.95	2.31	0.77	0.77	0.12	48.43
1996	0.29	9.52	9.00	20.00	3.70	1.95	2.31	0.77	0.77	0.12	48.43
1997	0.38	12.50	10.00	25.00	9.00	2.94	3.48	1.16	1.16	0.26	65.88
1998	0.44	13.00	10.50	26.00	11.00	3.50	3.50	1.59	1.59	0.32	71.44
1999	0.41	12.10	10.49	24.67	13.37	4.24	3.98	2.03	2.03	0.39	73.71
2000	0.47	10.60	8.40	18.31	15.03	4.97	4.91	2.03	2.03	0.39	67.14

fishery catch in Alaska has ranged from 16 to 61 million lb, with peak catches during 1987-1989. In the late 1970s, catches were somewhat stable around 17 million lb. Beginning in 1981, catches began to increase annually and peaked in 1988. Peak area catches were 11 million lb in Area 2C (1988); 38 million lb in Area 3A (1988); 11 million lb in Area 3B in 1998; and 9 million lb in Area 4 (1998). Since the peaks of the late 1980s, catches have declined, reaching a low of 44 million lb in 1995. The catch in 1998 (70 million lb) represents an 8% increase over 1997. Most of this increase has occurred in Areas 2B and 3B. Among areas, catch limits have historically been highest in Area 3A and lowest in the areas at the ends of the range: Area 2A and 4. Since 1981, catch limits for Areas 2B and 2C have been quite similar, although Area 2B has usually received higher catch limits than 2C.

As indicated in Table 2.3, almost half of the total coastwide catch was taken in Area 3A since 1977. The Gulf of Alaska (GOA) areas (2C, 3A, and 3B) accounted nearly 75% of the coastwide catch and 90% of the total catch taken from Alaskan waters. The GOA contribution has declined in more recent years, due to greater stock declines in the GOA areas.

Under Alaska's salmon and herring limited entry programs, permits have been transferred from holders who live in rural areas that are "local" to limited fisheries to holders who live in urban areas that are "non-local" to the limited fisheries. Some concern has been expressed that similar results might occur under the halibut IFQ program.

The distribution of initial QS holders and year-end 1998 halibut quota shares and QS holders is reported by IPHC area and resident type in Tables 2.4 and 2.5 (CFEC 1999a). These tables illustrate the distribution of QS using five resident types that were originally developed by Langdon (1995). The report analyzed changes in QS holdings within Alaska and between Alaska and other states using special resident-type classifications. All communities within Alaska are classified as "rural" or "urban" based upon 1990 census definitions, and as "local" or "non-local" to each halibut management area. Persons within each community can then be placed into one of five resident-types relative to the halibut management area for which a QS applies. These are listed below.

AK Rural Local (ARL)	A person residing in an Alaska rural community which is local to the IFQ management area for which the QS applies;
AK Rural Nonlocal(ARN)	A person residing in an Alaska rural community which is not local to the IFQ management area for which the QS applies;
AK Urban Local (AUL)	A person residing in an Alaska urban community which is local to the IFQ management area for which the QS applies;
AK Urban Nonlocal (AUN)	A person residing in an urban community which is nonlocal to the IFQ management area for which the QS applies;
Nonresident	A person residing in a location outside of Alaska.

Table 2.3. Commercial catch of Pacific halibut (metric tons, round weight). Catches for Area 2A include both the treaty and non-treaty commercial fisheries, but exclude the treaty ceremonial-&-subsistence fishery. Beginning in 1995, research catch is excluded.

Year	2A	2B	2C	3A	3B	4	Total
1977	127	3,283	1,929	5,224	1,929	738	13,231
1978	60	2,788	2,612	6,228	798	816	13,303
1979	30	2,939	2,739	6,857	236	828	13,630
1980	12	3,416	1,959	7,238	169	429	13,224
1981	121	3,416	2,425	8,599	272	720	15,553
1982	127	3,350	2,116	8,181	2,902	865	17,542
1983	157	3,289	3,870	8,532	4,686	2,673	23,208
1984	260	5,472	3,537	12,076	3,930	1,911	27,187
1985	296	6,283	5,569	12,608	6,585	2,588	33,929
1986	351	6,785	6,416	19,828	5,339	3,380	42,098
1987	357	7,407	6,458	18,939	4,692	4,160	42,014
1988	296	7,776	6,875	22,893	4,281	2,836	44,958
1989	284	6,307	5,763	20,396	4,741	2,981	40,472
1990	193	5,182	5,884	17,445	5,255	3,283	37,243
1991	218	4,336	5,255	13,823	7,214	3,622	34,467
1992	266	4,614	5,938	16,193	5,212	3,997	36,221
1993	314	6,428	6,827	13,751	4,753	3,779	35,852
1994	236	5,992	6,277	15,020	2,334	3,247	33,107
1995	187	5,817	4,692	11,090	1,887	2,866	26,540
1996	181	5,763	5,321	11,906	2,304	3,211	28,686
1997	242	7,377	5,980	14,924	5,503	5,315	39,341
1998	278	7,946	6,186	15,643	6,863	5,533	42,449

The amount of QS held by each resident type may change for three reasons: QS can be transferred to other resident types; QS holders can move to a place with a different resident-type classification (migration); or QS can be administratively revoked. Quota share transfers may occur between persons in the same resident category (intra-cohort) or between persons of different resident categories (cross-cohort). The percentages of intra-cohort and cross-cohort transfers varied widely by resident-type and management area, although intra-cohort transfer may have been more likely for the majority of areas and resident-types. Intra-cohort transfers were especially prevalent among nonresidents.

Alaska Rural Locals received QS in all management areas except 4D. Their largest shares of initial QS allocations came in Area 4E (59.3%), 4C (34.0%), and 2C (30.1%) (Table 2.4). By the end of 1998, ARL holdings had declined in Areas 2C, 3B, and 4A and had risen in Areas 3A, 4C and 4E.

Alaska Urban Locals received an initial allocation of QS in Areas 2C (50.3%), 3A (43.1%), and 4A (2.5%) only. By year-end 1998 AULs also held a very small percentage of the QS in Area 4B. AUL holdings had increased in Area 2C and 4A and declined in Area 3A.

Alaska Rural Nonlocals received small percentages of the QS in all management areas. These percentages ranged from less than 1% in Areas 2C, 4C, and 4D up to 6.2% in Area 4A at initial issuance. By year-end 1998, ARN holdings had declined in Areas 2C, 3A, 3B, and 4A and risen in Areas 4B, and 4D.

Table 2.4. Net result of halibut QS Transfers, Migrations, and revocations, from initial issuance through year-end 1998 by management area and resident type..

Area	Resident Type	Initial Amount of QS	Net Change Transfers	Pct. of Initial Issuance	Net Change Migrations	Pct. of Initial Issuance	Net Change Revoked	Pct. of Initial Issuance	Total Net Change In QS
2C	AK Rural Local	17,932,755	-2,026,430	-11.3	-790,624	-4.4	0	0.0	-2,817,054
	AK Rural Non-Loc	362,838	-301,302	-83.0	21,649	6.0	0	0.0	-279,653
	AK Urban Local	29,974,773	4,818,928	16.1	-287,914	-1.0	-549	0.0	4,530,465
	AK Urban Non-Loc	995,092	-518,416	-52.1	-35,051	-3.5	-2,138	-0.2	-555,605
	Nonresident	10,293,932	-1,972,780	-19.2	1,091,940	10.6	-5,446	-0.1	-886,286
		59,559,390							-8,133
3A	AK Rural Local	14,928,786	1,514,520	10.1	235,063	1.6	0	0.0	1,749,583
	AK Rural Non-Loc	4,206,395	-219,105	-5.2	-386,820	-9.2	0	0.0	-605,925
	AK Urban Local	79,834,467	-5,611,578	-7.0	821,343	1.0	-339,284	-0.4	-5,129,519
	AK Urban Non-Loc	19,507,831	7,104,256	36.4	-591,633	-3.0	-10,901	-0.1	6,501,722
	Nonresident	66,843,449	-2,788,093	-4.2	-77,953	-0.1	-247,267	-0.4	-3,113,313
		185,320,928							-597,452
3B	AK Rural Local	5,563,706	-652,294	-11.7	-221,276	-4.0	0	0.0	-873,570
	AK Rural Non-Loc	2,075,980	-554,586	-26.7	-79,327	-3.8	0	0.0	-633,913
	AK Urban Non-Loc	20,372,737	1,249,406	6.1	-1,067,691	-5.2	-225,600	-1.1	-43,885
	Nonresident	26,159,470	-42,526	-0.2	1,368,294	5.2	-105,705	-0.4	1,220,063
		54,171,893							-331,305
4A	AK Rural Local	50,264	13,939	27.7	-64,203	-127.7	0	0.0	-50,264
	AK Rural Non-Loc	907,184	-632,730	-69.7	8,859	1.0	0	0.0	-623,871
	AK Urban Local	364,612	159,083	43.6	70,872	19.4	0	0.0	229,955
	AK Urban Non-Loc	5,743,871	656,991	11.4	-157,629	-2.7	0	0.0	499,362
	Nonresident	7,485,405	-197,283	-2.6	142,101	1.9	-48,327	-0.6	-103,509
		14,551,336-							-48,327

4B	AK Rural Local	160,045	0	0.0	0	0.0	0	0.0	0
	AK Rural Non-Loc	207,969	231,980	111.5	0	0.0	0	0.0	231,980
	AK Urban Local	0	0	n.a.	340	n.a.	0	n.a.	340
	AK Urban Non-Loc	2,874,719	-81,878	-2.8	-119,495	-4.2	0	0.0	-201,373
	Nonresident	6,050,658	-150,102	-2.5	119,155	2.0	-8,617	-0.1	-39,564
		9,293,391							-8,617
4C	AK Rural Local	1,350,336	418,661	31.0	0	0.0	0	0.0	418,661
	AK Rural Non-Loc	23,170	0	0.0	0	0.0	0	0.0	0
	AK Urban Non-Loc	826,097	-26,618	-3.2	4,262	0.5	0	0.0	-22,356
	Nonresident	1,769,583	-392,043	-22.2	-4,262	-0.2	0	0.0	-396,305
		3,969,186							0
4D	AK Rural Non-Loc	29,451	179,421	609.2	-15,333	-52.1	0	0.0	164,088
	AK Urban Non-Loc	592,232	214,291	36.2	16,824	2.8	-44,173	-7.5	186,942
	Nonresident	4,168,808	-393,712	-9.4	-1,491	0.0	0	0.0	-395,203
		4,790,491							-44,173
4E	AK Rural Local	82,993	0	0.0	1,760	2.1	0	0.0	1,760
	AK Rural Non-Loc	4,937	0	0.0	0	0.0	0	0.0	0
	AK Urban Non-Loc	39,462	0	0.0	-2,282	-5.8	0	0.0	-2,282
	Nonresident	12,607	0	0.0	522	4.1	0	0.0	522
		139,999							0

Table 2.5. Initial Allocation and Year-end 1998 QS Holdings and QS Holders, By Area.

Area	Census Area	Initial Amount of QS	1998 Amount of QS	Number of QS Holders	Number of QS Holders
2C	Aleutians East	4,175	568	2	1
	Aleutians West	171,048	18,550	48	6
	Anchorage Borough	380,243	162,452	32	21
	Bethel	74,586	2,535	43	2
	Bristol Bay	4,589	2,970	10	6
	Dillingham	5,207	4,821	22	20
	Fairbanks\N. Star	135,026	56,316	10	3
	Haines	2,221,074	1,851,781	84	64
	Juneau	5,781,122	6,659,683	256	203
	Kenai Peninsula	261,476	177,181	34	16
	Ketchikan	3,296,194	3,951,101	147	113
	Kodiak Borough	146,856	42,641	32	14
	Lake and Peninsula	1,275	3,047	4	4
	MatSu Borough	56,261	8,683	8	3
	Nome	57	57	1	1
	Prince of Wales	4,551,549	3,234,831	221	141
	Sitka	9,936,267	9,992,393	328	263
	Skagway\Yakutat\Angoon	4,717,537	3,209,713	223	141
	Valdez\Cordova	19,219	3,456	7	2
	Petersburg\Wrangell	17,498,696	20,760,832	459	381
	Yukon\Koyukuk	3,001	0	1	0
	Outside Alaska	10,293,932	9,407,646	417	280
		59,559,390	59,551,257	2,389	1,685
3A	Aleutians East	248,743	13,666	7	2
	Aleutians West	608,367	205,403	54	15
	Anchorage Borough	7,414,783	7,448,621	270	214
	Bethel	211,899	191,775	42	3
	Bristol Bay	17,218	12,219	11	7
	Dillingham	10,292	461,546	21	20
	Fairbanks\N. Star	310,882	251,289	29	26
	Haines	484,623	557,890	18	17
	Juneau	3,126,721	5,397,818	82	74
	Kenai Peninsula	35,932,979	32,514,443	841	592
	Ketchikan	1,201,311	1,774,295	20	18
	Kodiak Borough	43,718,157	41,881,471	457	339
	Lake and Peninsula	55,577	16,899	10	7
	MatSu Borough	1,818,439	1,740,549	65	54
	NW Arctic	149	60,065	1	1
	Prince of Wales	462,841	71,607	24	7
	Sitka	5,930,471	7,093,925	130	108
	Skagway\Yakutat\Angoon	3,837,390	3,564,848	108	82
	SE Fairbanks	1,987	4,983	2	3
	Valdez\Cordova	3,408,866	5,614,960	156	124
	Wade Hampton	0	9,228	0	1
	Petersburg\Wrangell	9,673,870	12,104,424	86	79
	Yukon\Koyukuk	1,914	1,416	4	3
	Outside Alaska	66,843,449	63,730,136	636	451
		185,320,928	184,723,476	3,074	2,247

Area	Census Area	Initial Amount of QS	1998 Amount of QS	Number of QS Holders	Number of QS Holders
3B	Aleutians East	4,474,522	4,010,375	104	75
	Aleutians West	251,080	16,201	50	7
	Anchorage Borough	2,688,992	799,106	65	37
	Bethel	61,923	1,956	42	1
	Bristol Bay	7,835	2,680	11	6
	Dillingham	3,007	11,156	21	20
	Fairbanks\N. Star	23,646	149,287	2	2
	Juneau	247,227	383,261	11	6
	Kenai Peninsula	5,299,803	5,373,305	181	117
	Ketchikan	170,192	211,759	5	3
	Kodiak Borough	10,343,667	12,157,619	201	147
	Lake and Peninsula	1,050,965	682,510	26	17
	MatSu Borough	295,998	263,814	14	7
	Prince of Wales	39,313	70	3	1
	Sitka	1,523,669	1,123,825	21	13
	Skagway\Yakutat\Angoon	232,579	76,835	8	4
	Valdez\Cordova	67,892	78,308	5	4
	Petersburg\Wrangell	1,230,113	1,118,988	11	6
	Outside Alaska	26,159,470	27,379,533	277	196
		54,171,893	53,840,588	1,058	669
4A	Aleutians East	264,962	143,811	23	9
	Aleutians West	450,431	622,041	67	60
	Anchorage Borough	526,816	390,911	21	16
	Bethel	16,439	519	42	1
	Bristol Bay	14,794	710	11	6
	Dillingham	799	2,963	21	20
	Fairbanks\N. Star	0	44,489	0	1
	Juneau	98,817	139,563	3	5
	Kenai Peninsula	1,941,229	1,850,811	75	46
	Ketchikan	80,293	146,806	4	3
	Kodiak Borough	2,573,135	3,076,914	63	56
	Lake and Peninsula	1,037	730	5	4
	MatSu Borough	152,125	54,529	9	5
	Prince of Wales	10,093	18	2	1
	Sitka	509,819	363,063	16	7
	Skagway\Yakutat\Angoon	135,616	48,967	4	2
	Valdez\Cordova	6,067	732	3	1
	Petersburg\Wrangell	283,459	233,536	8	4
	Outside Alaska	7,485,405	7,381,896	155	112
		14,551,336	14,503,009	532	359
4B	Aleutians West	217,591	210,322	16	16
	Anchorage Borough	34,129	78,760	2	4
	Dillingham	0	370,314	0	1
	Haines	0	7,609	0	1
	Juneau	110,956	103,198	3	2
	Kenai Peninsula	569,966	673,891	16	13
	Ketchikan	1,686	0	1	0
	Kodiak Borough	1,538,104	1,196,739	27	22
	MatSu Borough	33,685	45,322	2	2
	Sitka	382,474	258,470	8	4
	Skagway\Yakutat\Angoon	41,459	41,459	1	1
	Valdez\Cordova	56,991	0	1	0
	Petersburg\Wrangell	255,692	287,596	3	2
	Outside Alaska	6,050,658	6,011,094	73	56

Area	Census Area	Initial Amount of QS	1998 Amount of QS	Number of QS Holders	Number of QS Holders
		9,293,391	9,284,774	153	124
4C	Aleutians West	1,478,344	1,897,005	32	35
	Anchorage Borough	119,592	0	2	0
	Juneau	8,747	8,747	1	1
	Kenai Peninsula	97,629	101,792	3	2
	Kodiak Borough	469,828	582,973	8	7
	MatSu Borough	0	5,391	0	1
	Sitka	25,463	0	2	0
	Outside Alaska	1,769,583	1,373,278	32	26
		3,969,186	3,969,186	80	72
4D	Aleutians West	67,584	67,584	1	1
	Anchorage Borough	84,640	0	1	0
	Dillingham	0	122,473	0	1
	Juneau	24,235	154,426	1	1
	Kenai Peninsula	76,708	65,254	2	1
	Kodiak Borough	207,837	432,355	10	10
	MatSu Borough	40,479	17,588	2	1
	Sitka	14,118	14,118	1	1
	Skagway\Yakutat\Angoon	0	56,948	0	1
	Wade Hampton	106,082	41,967	4	1
	Petersburg\Wrangell	4,168,808	3,773,605	46	38
	Outside Alaska	0	0	0	0
		4,790,491	4,746,318	68	56
4E	Aleutians East	3,878	3,878	1	1
	Aleutians West	4,184	4,184	1	1
	Anchorage Borough	5,090	10,976	9	10
	Bethel	73,808	73,808	42	42
	Bristol Bay	4,934	4,934	10	10
	Dillingham	3,585	3,440	21	20
	Kenai Peninsula	638	638	2	2
	Kodiak Borough	6,791	6,791	2	2
	Lake and Peninsula	1,372	3,277	4	4
	MatSu Borough	20,324	12,156	2	1
	Prince of Wales	83	83	1	1
	Valdez\Cordova	489	489	1	1
	Petersburg\Wrangell	2,216	2,216	2	2
	Outside Alaska	12,607	13,129	6	7
		139,999	139,999	104	104

Alaska Urban Nonlocals received QS in all areas and received over 20% of the QS in Areas 3B, 4A, 4B, 4C, and 4E at initial issuance. AUN holdings had increased in areas 3A, 3B, 4A, and 4D and declined in the other areas by year-end 1998.

Nonresidents received QS in every area. They received over half of the QS in Areas 4A, 4B, and 4D and over 35% in six of the areas. By year-end 1998, nonresident QS holdings had increased slightly in Areas 3B and 4E and declined in all other areas. The net result of transfer activity lowered Nonresident QS holdings in all areas except Area 4E.

There have been concerns that the IFQ program might result in a dramatic restructuring that could increase the role of the halibut fishery in some areas while reducing its impact in other areas. Table 2.5 provides another view of the changes that have occurred in the geographic distribution of QS holdings since initial issuance. QS holders from Alaska are assigned to census areas based upon their addresses. Persons who reside outside of Alaska were put into a single "Outside Alaska" category. The distribution of QS and QS holders are then examined at initial issuance and at year-end 1998.

Census areas where Alaskans hold relatively high percentages of QS (10% or more of the area QS at year-end 1998) are: Juneau, Petersburg/Wrangell, and Sitka (Area 2C); Kodiak (Areas 3A, 3B, 4A, 4B, and 4C), Kenai Peninsula (Areas 3A, 3B, and 4A); Aleutian Islands West (Area 4C); and Bethel (Area 4E).

Persons who reside outside of Alaska held substantial portions of the QS in all areas except 4E, ranging from 15.8% in Area 2C to 79.5% in Area 4D by the end of 1998. They held more than 50% of the QS in areas 4A, 4B, and 4D at both initial issuance and year-end 1998.

The number of persons who held QS declined in most census areas. This parallels the overall decline in QS holders due to transfers and QS consolidation. The percent decline of QS holders for non-CDQ management Areas 2C through 4A is relatively high for some census areas. This may be partially due to QS holders for CDQ areas transferring their CDQ compensation QS.

The halibut IFQ catch distribution for 1999 by port of landing is listed in Table 2.6. It shows that Sitka (979), Kodiak (971), and Homer (920) had the greatest number of vessel landings in 1999. Homer (11.6 M), Kodiak (10.1 M), Seward (6.8 M), Dutch Harbor/Unalaska (5.2 M), Juneau (3.0 M), Sitka (2.8 M), and Petersburg (2.3 M) led Alaska ports for total pounds landed (in millions).

Table 2.6. Total halibut IFQ landings, March 15 - Decemeber 29, 1999.

	Port	Vessel Landings	Pounds Landed	Percent Total
ALASKA	ADAK	58	1,128,781	2
	AKUTAN	19	15,561	0.03
	ANGOON	18	20,027	0.04
	CHIGNIK	48	405,527	0.72
	CORDOVA	215	1,444,497	2.56
	CRAIG	252	399,755	0.71
	DUTCH HBR/UNALASKA	349	5,197,176	9.21
	GUSTAVUS	52	56,864	0.1
	HAINES	105	600,189	1.06
	HOMER	920	11,563,889	20.49
	HOONAH	471	1,335,072	2.37
	HYDER	12	1,806	0
	JUNEAU	598	2,985,964	5.29
	KAKE	4	2,794	0
	KENAI	49	189,431	0.34
	KETCHIKAN	200	575,592	1.02
	KING COVE	78	1,007,309	1.78
	KODIAK	971	10,065,891	17.84
	METLAKATLA	10	20,741	0.04
	NINILCHIK	25	88,837	0.16
	PELICAN	75	138,643	0.25
	PETERSBURG	659	2,305,390	4.08
	PORT ALEXANDER	80	98,414	0.17
	SAND POINT	107	780,593	1.38
	SELDOVIA	12	2,273	0
	SEWARD	497	6,823,915	12.09
	SITKA	979	2,790,193	4.94
	SKAGWAY	15	25,845	0.05
	ST GEORGE	10	9,191	0.02
	ST PAUL	131	279,198	0.49
	VALDEZ	38	155,923	0.28
	WHITTIER	94	372,546	0.66
	WRANGELL	353	1,178,606	2.09
	YAKUTAT	294	1,304,271	2.31
NON-ALASKA		123	3,065,825	5
	Total	7,921	56,436,529	99.99

Notes:

1. This report summarizes fixed gear IFQ landings reported by Registered Buyers. At sea discards are not included.
2. Halibut weights are reported in net (headed and gutted) pounds.
3. "Vessel Landings" include the number of landings by participating vessels reported by IFQ regulatory area. Each such landing may include harvests from more than one IFQ Permit Holder.
4. Landings at different harbors in the same general location (e.g."Juneau, Douglas, and Auke Bay") have been combined to report landings to the main port (e.g. "Juneau").
5. "Vessel Offload" is the removal of fish from a harvesting vessel to (or by) a Registered Buyer on a particular date/time.
6. Due to over- or underharvest of TAC and/or rounding, percentages may not total to 100%.
7. Data are derived from initial data entry procedures and are preliminary. Future editing may result in minor changes.

Table 2.7 lists the halibut CDQ groups and 2000 allocations in pounds for each CDQ organization. Table 2.8 lists the communities for each CDQ group. In addition to halibut, sablefish, and pollock, the CDQ program was recently recommended to be expanded to all groundfish and crab species.

Table 2.7 CDP Area Allocations in Percents for Halibut*

Area	APICDA	BBEDC	CBSFA	CVRF	NSEDC	YDFDA	Total
4B	100%						100%
4C	10%		90%				100%
4D		23%		24%	26%	27%	100%
4E		30%		70%			100%

CDP Area Allocations in Pounds for Halibut*

Area	APICDA	BBEDC	CBSFA	CVRF	NSEDC	YDFDA	Total
4B	982,000	0	0	0	0	0	982,000
4C	101,500	0	913,500	0	0	0	1,015,000
4D	0	140,070	0	146,160	158,340	164,430	609,000
4E	0	117,000	0	273,000	0	0	390,000
Total	1,083,500	257,070	913,500	419,160	158,340	164,430	2,996,000

* Halibut pounds are net weight (head off, gutted) and are amounts available to CDQ groups at the start of the 2000 fishing year.

APICDA = Aleutian Pribilof Island Community Development Association
BBEDC = Bristol Bay Economic Development Corporation
CBSFA = Central Bering Sea Fishermen's Association
CVRF = Coastal Villages Region Fund
NSEDC = Norton Sound Economic Development Corporation
YDFDA = Yukon-Delta Fisheries Development Association

The Metlakatla Indian Community was authorized by the United States government (Bureau of Indian Affairs) to conduct a commercial halibut fishery within the 3000 foot Annette Island Reserve. IPHC is provided with logbook information, ADF&G fish tickets, and the tribal biologist samples halibut landings (halibut lengths and otoliths) (Attachment 1). In 1999, 26 different vessels fished as part of the Metlakatla fishery landing approximately 35,000 pounds of halibut (Table 2.9) (H. Gilroy, pers. commun. 2000). The 1999 fishery occurred between May 22 and Oct 31 with thirteen 48-hr fishing periods. The catch was 12,000 and 88,000 pounds in 1998 and 1997 respectively. A higher ex-vessel price may have brought fishers back to the fishery, however, the total catch was still lower than it was in 1997.

The IPHC has also set aside 300,000 lb for use in the Indian food fishery by Native residents of British Columbia, Canada beginning in 1994. This amounts to 10 lb per person for the roughly 30,000 Native inhabitants.

Table 2.8 lists the communities for each CDQ group.

Bristol Bay Economic Development Foundation

Aleknagik
Clark's Point
Dillingham
Egegik
Ekuk
Ekwok
Levelock
Manokotak
Naknek
King Salmon/Sayonoski
South Naknek
Togiak
Twin Hills
Pilot Point/Ugashik
Port Heiden
Portage Creek

Coastal Villages Fishing Cooperative

Chefornak
Chevak
Eek
Goodnews Bay
Hooper Bay
Kipnuk
Konigranak
Kwigillingok
Mekoryuk
Napakiak
Napaskiak
Newtok
Nightmute
Oscarville
Platinum
Quinhagak
Scammon Bay
Tooksook Bay
Tuntutuliak
Tununak

Norton Sound Economic Development Foundation

Brevig Mission
Diomede/Ignaluk
Elim
Gambell
Golovin
Koyuk
Nome
Savoonga
Shaktoolik
St. Michael
Stebbins
Teller
Unalakleet
Wales
White Mountain

Yukon Delta Fisheries Development Association

Alakanuk
Emmonak
Grayling
Kotlik
Mountain Village
Sheldon Point

Aleutian Pribolof Island Community Development Association

Akutan
Atka
False Pass
Nelson Lagoon
Nilolski
St. George
Unalaska

Central Bering Sea Fishermen's Association

Saint Paul

Table 2.9. Metlakatla community fishing periods, number of vessels, and halibut catch (net weight), 1999. Preliminary.

Fishing Period Dates	Number Of Vessels	Catch (Pounds)
May 22 – 24	7	1,216
June 6 – 8	9	2,392
June 18 – 20	8	2,804
July 9 – 11	5	3,589
July 16 –18	10	4,094
July 3- Aug 1	7	4,553
August 13 – 15	9	7,376
August 27 – 29	2	NA
September 3 – 5	8	4,067
September 17 –19	5	1,374
October 1 –3	7	2,088
October 15 –17	2	NA
October 29 – 31	0	0
13 Fishing Periods		34,996

2.2 Sport Fishery

Recreational fishing for halibut was nonexistent in the 1920s but has grown into a major industry in Canada and Alaska, with total harvests of 9 million pounds in 1999 (Table 2.10). The first IPHC regulations on sport fishing were instituted in 1973 and included an 8-month season with limitations on the individual's daily catch and the gear. Since that time, sport regulations have grown in complexity and have seen increased involvement by state, provincial and Federal agencies.

In many instances sportfishing is done primarily for recreational values (that is, "sport," fun," "enjoyment," "fair competition," etc.) - participation in a recreational-quality activity is the primary cultural value. Sport regulations in general are consistent with these recreational values, in that they provide for relatively inefficient gear (2-hooks, a "fair chase ethic"), limited daily bags (2-fish per day; food is not the primary purpose of the activity), and sport license requirements (user's pay for management, etc.). The sport cultural tradition in Alaska derives from Euroamerican historic traditions, and the people who currently participate in it are primarily from Euroamerican cultural groups living in urbanized areas (but also some rural places) in Alaska and the continental U.S.

In addition to recreational motives, Alaska residents and many nonresidents that fish for halibut under sport regulations may be motivated in large part to put some halibut in the freezer, and a significant portion consider what they are doing to be providing subsistence food with rod and reel. Anecdotal data suggests that many charter anglers evaluate the success of their trip by the poundage caught and whether it was cheaper to fish or buy the halibut. Halibut are not terribly exciting or difficult to catch. The bag limit of two fish may be perceived as adequate to satisfy food needs given the mean size of halibut. Whether or not there is a one to one correspondence in the cost consideration of choosing to sportfish versus purchasing commercially caught halibut remains to be tested; however, it is likely that some anglers derive additional value from stocking their freezers with fish they themselves caught than they would have realized from purchasing commercially caught halibut.

The Alaska Department of Fish and Game (ADF&G) provides harvest estimates from Areas 2C, 3 and 4 using a postal survey, port sampling, creel survey, and charter vessel logbook, begun in 1998. Total sport halibut landings for Areas 2C and 3A are listed in Tables 2.11 and 2.12. Figures 2.1 and 2.2 depict the halibut sport landings by port for Areas 2C and 3A.

At its February 2000 meeting, the Council took final action to redefine the halibut charter guideline harvest level (GHL) and approved accompanying management measures to implement the GHL. This action, if approved by the Secretary, would base the GHL on a combined commercial and charter quota to be set by the IPHC (NPFMC 2000). The Council set the Area 2C and 3A GHLs based on the average of 1995-99 in pounds (1.4 M lb in Area 2C and 3.91 M lb in Area 3A). It also initiated an analysis and formed an industry committee to develop elements and options to include halibut charter participants in the current halibut IFQ program. Final action on incorporating the charter fishery into the current IFQ system is scheduled for February 2001.

Table 2.10 Harvest by sport fishers (millions of pounds, net weight) by Regulatory Area, 1977-99.

Year	Area 2A	Area 2B	Area 2C	Area 3A	Area 3B	Area 4	Total
1977	0.013	0.017	0.072	0.196			0.298
1978	0.010	0.009	0.082	0.282			0.383
1979	0.015	0.018	0.174	0.365			0.572
1980	0.019	0.011	0.332	0.488			0.850
1981	0.019	0.023	0.318	0.751		0.012	1.123
1982	0.050	0.066	0.489	0.716		0.011	1.332
1983	0.063	0.103	0.553	0.945		0.003	1.667
1984	0.118	0.124	0.621	1.026		0.013	1.902
1985	0.193	0.525	0.682	1.210		0.008	2.618
1986	0.333	0.372	0.730	1.908		0.020	3.363
1987	0.446	0.527	0.780	1.989		0.030	3.772
1988	0.249	0.504	1.076	3.264		0.036	5.129
1989	0.327	0.635	1.559	3.005		0.024	5.550
1990	0.197	0.762	1.330	3.638		0.040	5.967
1991	0.158	0.584	1.654	4.264	0.014	0.127	6.801
1992	0.250	0.580	1.668	3.899	0.029	0.043	6.469
1993	0.246	0.657	1.811	5.265	0.018	0.057	8.054
1994	0.186	0.657	2.001	4.487	0.021	0.042	7.394
1995	0.236	1.582	1.759	4.488	0.022	0.055	8.142
1996	0.229	1.582	1.534	4.822	0.022	0.071	8.260
1997	0.355	1.582	1.714	5.637	0.028	0.072	9.388
1998	0.383	1.582	2.708	5.270	0.022	0.114	9.974
1999[1]	0.338	1.582	1.830	5.243	0.022	0.108	9.122

[1]Only Area 2A harvest is current data, all other areas are projected harvests. These projections will be updated when data becomes available. Alaska (Areas 3A, 3B and 4) harvests for 1998 are still considered preliminary.

Table 2.11. Estimated sport harvest biomass (pounds net wt.) based on the estimated number of fish harvested in IPHC Area 2C, 1994-98. (Source: SWHS amd SCVL)

		Statewide Harvest Survey Estimates(a)												Statewide Charter Vessel Logbook(b)
Class	**Area**	**1994**	**% of Total**	**1995**	**% of Total**	**1996**	**% of Total**	**1997**	**% of Total**	**1998**	**% of Total**	**TOTAL**	**% of Total**	**1998**
Charter														
	Ketchikan	90,970	9.2%	99,755	10.1%	111,315	11.9%	113,019	13.3%	56,539	3.2%	471,598	8.5%	78,660
	Prince of Wales	326,772	33.2%	256,326	26.0%	218,743	23.4%	150,396	17.6%	593,465	33.6%	1,545,702	28.0%	621,489
	Petersburg/Wrangell	83,579	8.5%	104,556	10.6%	110,526	11.8%	102,484	12.0%	232,285	13.1%	633,430	11.5%	162,325
	Sitka	419,611	42.6%	362,128	36.7%	305,733	32.7%	330,470	38.8%	695,578	39.4%	2,113,520	38.2%	725,772
	Juneau	30,860	3.1%	95,288	9.7%	122,084	13.0%	108,712	12.8%	108,753	6.2%	465,697	8.4%	170,929
	Haines/Skagway	1,760	0.2%	2,993	0.3%	6,679	0.7%	7,344	0.9%	1,640	0.1%	20,416	0.4%	3,301
	Glacier Bay	31,962	3.2%	65,100	6.6%	60,616	6.5%	40,066	4.7%	78,741	4.5%	276,485	5.0%	43,788
	Charter Subtotal	985,514	100.0%	986,146	100.0%	935,696	100.0%	852,491	100.0%	1,767,001	100.0%	5,526,848	100.0%	1,806,263
Noncharter														
	Ketchikan	158,632	15.9%	105,904	13.8%	136,038	19.0%	140,799	16.4%	129,098	13.7%	670,471	15.7%	
	Prince of Wales	98,919	9.9%	97,410	12.7%	83,824	11.7%	100,666	11.7%	120,007	12.8%	500,826	11.7%	
	Petersburg/Wrangell	147,390	14.7%	110,821	14.5%	121,922	17.0%	164,401	19.1%	161,700	17.2%	706,234	16.5%	
	Sitka	395,703	39.6%	214,931	28.1%	160,915	22.5%	153,670	17.9%	197,440	21.0%	1,122,659	26.2%	
	Juneau	127,679	12.8%	166,720	21.8%	150,200	21.0%	205,000	23.8%	235,727	25.0%	885,326	20.7%	
	Haines/Skagway	14,428	1.4%	11,816	1.5%	13,763	1.9%	13,913	1.6%	10,937	1.2%	64,857	1.5%	
	Glacier Bay	57,528	5.8%	57,557	7.5%	48,740	6.8%	81,886	9.5%	86,192	9.2%	331,903	7.8%	
	Noncharter Subtotal	1,000,279	100.0%	765,159	100.0%	715,402	100.0%	860,335	100.0%	941,101	100.0%	4,282,276	100.0%	
Total														
	Ketchikan	249,602	12.6%	205,659	11.7%	247,353	15.0%	253,818	14.8%	185,637	6.9%	1,142,069	11.6%	
	Prince of Wales	425,691	21.4%	353,736	20.2%	302,567	18.3%	251,062	14.7%	713,472	26.3%	2,046,528	20.9%	
	Petersburg/Wrangell	230,969	11.6%	215,377	12.3%	232,448	14.1%	266,885	15.6%	393,985	14.5%	1,339,664	13.7%	
	Sitka	815,314	41.1%	577,059	33.0%	466,648	28.3%	484,140	28.3%	893,018	33.0%	3,236,179	33.0%	
	Juneau	158,539	8.0%	262,008	15.0%	272,284	16.5%	313,712	18.3%	344,480	12.7%	1,351,023	13.8%	
	Haines/Skagway	16,188	0.8%	14,809	0.8%	20,442	1.2%	21,257	1.2%	12,577	0.5%	85,273	0.9%	
	Glacier Bay	89,490	4.5%	122,657	7.0%	109,356	6.6%	121,952	7.1%	164,933	6.1%	608,388	6.2%	
	Total Area 2C	1,985,793	100.0%	1,751,305	100.0%	1,651,098	100.0%	1,712,826	100.0%	2,708,102	100.0%	9,809,124	100.0%	

(a) Data Source: 1998 Statewide Harvest Survey (preliminary), ADF&G Division of Sport Fish.

Note: Above SWHS estimates prior to 1998 are likely biased low due to timing related to extraction of survey candidates for the Statewide Harvest Survey (see Memo for details).

All SWHS estimates shown above are subject to change upon finalizing methodology related to assignment of charter and non-charter proportions to the total statewide estimates in each area.

(b) Data Source: 1998 Charter Vessel Logbook Summary, ADF&G-PTS, Division of Sport Fish

There were 640 halibut caught (383 kept and 257 released) statewide for which the SWHS could not be determined due to missing data.

Table 2.12. Estimated sport harvest biomass (pounds net wt.) based on the estimated number of fish harvested in IPHC Area 3A, 1994-98. (Source: SWHS amd SCVL)

A. Statewide Harvest Survey estimates of number of fish (a).

B.Statewide charter logbook estimates

Class	Area	1994		1995		1996		1997		1998		TOTAL		1998	
			% of Total		% of Total		% of Total		% of Total		% of Total		% of Total		% of Total
Charter	Yakutat (b)	60,910	2.4%	53,378	1.9%	73,105	2.5%	147,805	4.2%	151,654	4.7%	486,852.00	3.2%	134,732	4.0%
	Prince William Sound	258,790	10.1%	364,241	12.8%	266,519	9.2%	489,090	13.9%	385,474	11.9%	1,764,114.00	11.7%	377,437	11.3%
	North Gulf (c)	356,780	14.0%	332,343	11.7%	251,754	8.7%	488,212	13.9%	430,800	13.3%	1,859,889.00	12.4%	445,228	13.4%
	Lower Cook Inlet (d)	1,102,347	43.2%	1,144,726	40.3%	1,403,864	48.7%	1,499,925	42.7%	1,232,966	38.1%	6,383,828.00	42.5%	1,237,155	37.2%
	Central Cook Inlet	616,352	24.1%	766,845	27.0%	736,282	25.5%	717,138	20.4%	901,564	27.8%	3,738,181.00	24.9%	898,180	27.0%
	Kodiak	158,547	6.2%	177,126	6.2%	153,746	5.3%	169,814	4.8%	135,934	4.2%	795,167.00	5.3%	235,255	7.1%
	Charter Subtotal	2,553,726	100.0%	2,838,659	100.0%	2,885,270	100.0%	3,511,984	100.0%	3,238,392	100.0%	15,028,031.00	100.0%	3,327,987	100.0%
Noncharter	Yakutat (b)	29,522	1.5%	14,695	0.9%	12,091	0.6%	14,678	0.7%	41,312	2.1%	112,298.00	1.2%		
	Prince William Sound	301,991	15.4%	287,750	17.3%	463,505	23.9%	393,518	18.5%	349,952	18.1%	1,796,716.00	18.7%		
	North Gulf (c)	153,821	7.9%	122,204	7.4%	120,654	6.2%	153,139	7.2%	142,161	7.3%	691,979.00	7.2%		
	Lower Cook Inlet (d)	801,086	40.9%	540,654	32.5%	496,847	25.6%	577,650	27.1%	468,793	24.2%	2,885,030.00	30.0%		
	Central Cook Inlet	457,666	23.4%	488,602	29.4%	599,126	30.9%	670,187	31.5%	607,147	31.3%	2,822,728.00	29.3%		
	Kodiak	214,100	10.9%	207,861	12.5%	247,851	12.8%	319,413	15.0%	328,723	17.0%	1,317,948.00	13.7%		
	Noncharter Subtotal	1,958,186	100.0%	1,661,766	100.0%	1,940,074	100.0%	2,128,585	100.0%	1,938,088	100.0%	9,626,699.00	100.0%		
Total	Yakutat	90,432	2.0%	68,073	1.5%	85,196	1.8%	162,483	2.9%	192,966	3.7%	599,150.00	2.4%		
	Prince William Sound	560,781	12.4%	651,991	14.5%	730,024	15.1%	882,608	15.6%	735,426	14.2%	3,560,830.00	14.4%		
	North Gulf	510,601	11.3%	454,547	10.1%	372,408	7.7%	641,351	11.4%	572,961	11.1%	2,551,868.00	10.4%		
	Lower Cook Inlet	1,903,433	42.2%	1,685,380	37.4%	1,900,711	39.4%	2,077,575	36.8%	1,701,759	32.9%	9,268,858.00	37.6%		
	Central Cook Inlet	1,074,018	23.8%	1,255,447	27.9%	1,335,408	27.7%	1,387,325	24.6%	1,508,711	29.1%	6,560,909.00	26.6%		
	Kodiak	372,647	8.3%	384,987	8.6%	401,597	8.3%	489,227	8.7%	464,657	9.0%	2,113,115.00	8.6%		
	Total Area 3A	4,511,912	100.0%	4,500,425	100.0%	4,825,344	100.0%	5,640,569	100.0%	5,176,480	100.0%	24,654,730.00	100.0%		

(a) Biomass estimated as the product of estimated mean weight and estimated harvest. Harvest estimates for each class (charter, noncharter) for Yakutat, Prince William Sound, and Kodiak are preliminary.

(b) Yakutat harvest biomass was estimated using class-specific mean weights for Valdez prior to 1998. Used Yakutat overall mean weight in 1998.

(c) North Gulf harvest biomass estimates based on mean weights from private, charter, and military anglers, and assume that 60% of military harvest is reported as private.

(d) Lower Cook Inlet charter harvest biomass estimates based on mean weights from fish cleaned in port and at sea.

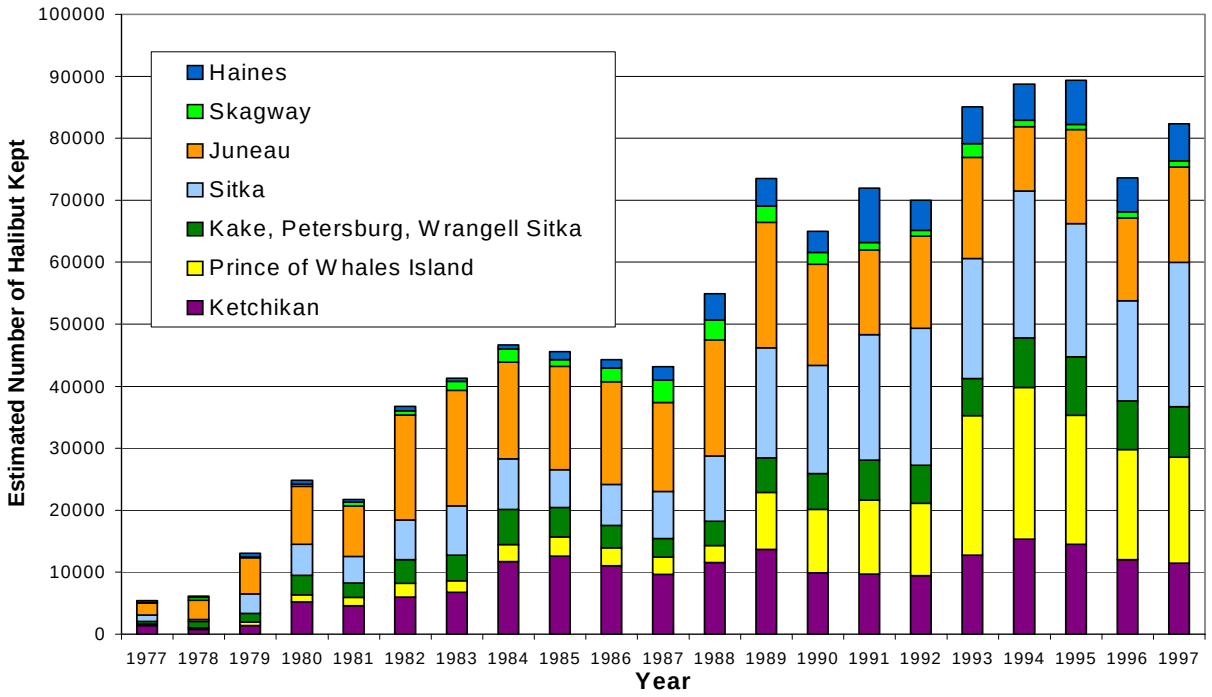


Figure 2.1. Historical sport (charter and non-charter) harvests by port in Area 2C.

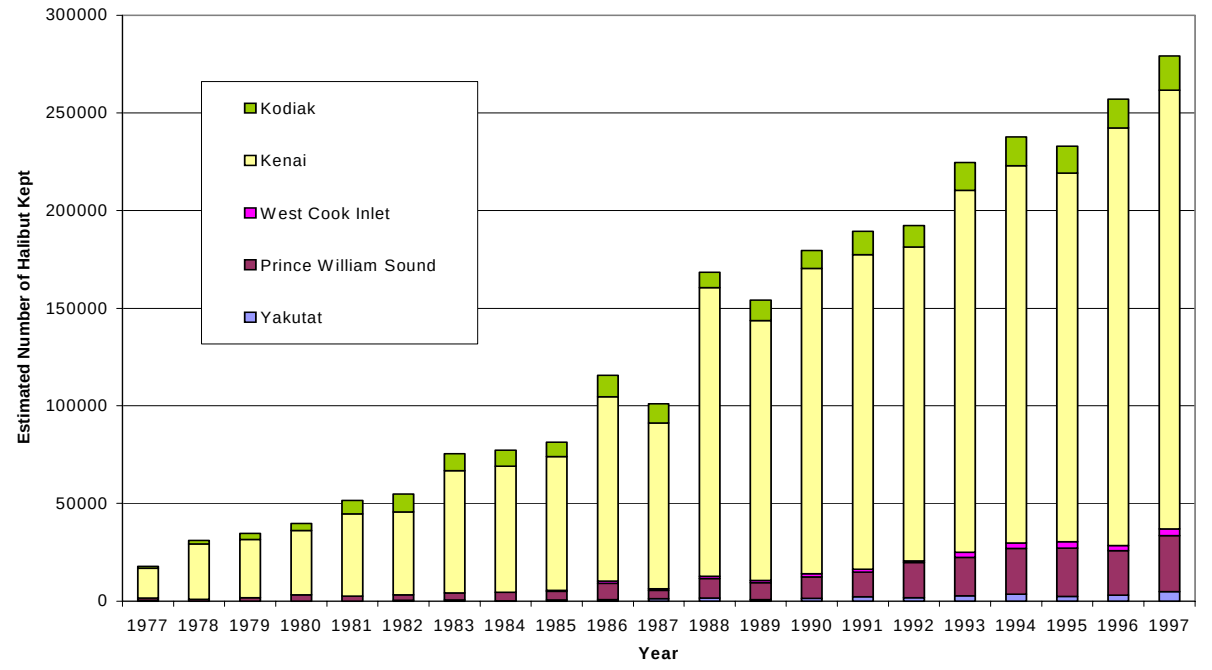


Figure 2.2. Historical sport harvests (charter and non-charter) by region in Area 3A .

2.3 Other non-commercial uses

Subsistence fishing is a traditional use in Alaska primarily for food use by domestic family groups, including noncommercial sharing and distribution systems. Potential halibut subsistence regulations should be consistent with these values, in that they should provide for established patterns of use, including customary efficient gear from the point of view of domestic family groups, relatively unrestricted seasons and bags except for conservation reasons (subsistence fisheries are for food and are generally self-limiting because the limited size of the subsistence sharing-consumption networks), and relatively simple reporting-permitting systems. The subsistence cultural traditions in Alaska have evolved over time in Alaska, and the people who are most heavily involved in subsistence patterns are Alaska Native groups with local cultural traditions of use; in addition, non-Natives living in "rural" places (places with a mixed, subsistence-market economic system) participate in some subsistence activities. Subsistence production-distribution is commonly a major economic sector in rural communities. Mixed, subsistence-market economies are characteristic of rural villages and a few large towns in Alaska -- these are local systems of production-consumption where wild food production contributes a substantial portion of the food supply of the community (that is, about 50% or more the community's protein needs). Subsistence halibut fishing typically occurs in rural places with subsistence-market economies.

"Subsistence" can not be distinguished from "sport" halibut landings until subsistence is defined by the Council, (i.e., are "subsistence" harvests from Natives only or all rural residents; from which gear types?). Under Option 1, the Council will identify subsistence landings through the process of selecting eligibility criteria for communities, users in those communities, and legal gear (Options 2 - 4). The final draft of this analysis will reflect the Council's preferred option on eligibility, and will therefore be able to provide improved estimates of "sport," "subsistence," and "personal use" halibut removals. Those estimates of removals will be forwarded to the IPHC for their review in determining halibut removals. In this draft analysis, therefore, all non-commercial landings are presented by community, user, and gear.

Table 2.13 lists non-commercial halibut harvests for Alaska Native and non-Native households for rural communities from ADF&G surveys. A summary of this data by IPHC regulatory area is provided in Table 2.14. It shows that 105,550 lb (19.4%) of halibut were removed from commercial gear, 233,080 lb (42.8%) were removed from other non-commercial gear, and 205,864 lb (37.8%) were removed from rod-and-reel gear by Natives in rural communities for all IPHC areas. Non-Natives removed 99,348 lb (11.1%) from commercial gear, 13,941 lb (1.6%) from non-commercial gear and 780,198 lb (87.3%) were removed from rod-and-reel gear for all areas. Note that these data do not include halibut harvests by Alaska Native tribal members residing in Juneau, Ketchikan, and the Kenai Peninsula.

A wide range of per capita harvests are reported by rural community for individual survey years between 1984 and 1994 in Table 2.15. The highest rates are reported for Alaska Native households in Tenakee Springs (nearly 300 lb) and Gustavus and Port protection (above 100 lb) in Area 2C; Port Graham and Old Harbor (about 80 lb) in Area 3A; Chignik bay (74 lb) in Area 3B; and Nikolski (nearly 300 lb), St. Paul (167 lb), Tununak (124 lb) and Akutan (115 lb) in Area 4. The highest non-Natives harvests occurred in Meyers Chuck (above 100 lb) in Area 2C; Port Lions (139 lb) and Nanwalek (112 lb) in Area 3A; Perryville (91 lb) in Area 3B; and Unalaska (80 lb) and Akutan (68 lb) in Area 4. An average of 50 lb per capita is a reasonable overall estimate of personal consumption.

The following discussion of halibut harvests by gear type is taken from Wolfe (1994). Federal regulations recognize only commercial and sport halibut fishing (sportfishing is broadly defined as all non-commercial fishing). One exception is for a single treaty Indian fishery at the Metlakatla Reserve in Southeast Alaska.

Table 2.13. Halibut Harvests (Lbs Rd Wt) for Non-Commercial Use by Residents of Alaska Rural Places

Source: Alaska Department of Fish and Game, Division of Subsistence Household Surveys

	Harvests by Alaska Native Households	Harvests by Non-Native Households

	Survey Year	Removed from Commercial Gear	Other Non Commercial Gear	Rod and Reel Gear	All Gear Types Combined	Removed from Commercial Gear	Other Non-Commercial Gear	Rod and Reel Gear	All Gear Types Combined	Removed from Commercial Gear	Other Non-Commercial Gear	Rod and Reel Gear	All Gear Types Combined
District 2C													
Angoon	1987	2,876	*	8,088	10,964	54	*	5,226	5,281	2,930	*	13,315	16,245
Coffman Cove	1987	0	*	0	0	172	*	6,822	6,994	172	*	6,822	6,994
Craig	1987	1,117	*	7,842	8,959	2,775	*	9,283	12,058	3,892	*	17,125	21,017
Edna Bay	1987	0	*	0	0	1,760	*	4,061	5,820	1,760	*	4,061	5,820
Elfin Cove	1987	0	*	0	0	955	*	1,511	2,467	955	*	1,511	2,467
Gustavus	1987	0	*	1,318	1,318	553	*	10,816	11,369	553	*	12,134	12,687
Haines	1987	1,620	*	262	1,882	4,190	*	25,928	30,118	5,810	*	26,190	32,000
Hollis	1987	0	*	0	0	41	*	941	983	41	*	941	983
Hoonah	1987	10,649	*	5,101	15,750	1,027	*	18,075	19,102	11,675	*	23,177	34,852
Hydaburg	1987	4,128	*	6,007	10,134	0	*	1,924	1,924	4,128	*	7,930	12,058
Hyder	1987	0	*	0	0	1,350	*	3,578	4,928	1,350	*	3,578	4,928
Kake	1987	3,044	*	7,112	10,156	1,343	*	6,411	7,754	4,387	*	13,523	17,910
Kasaan	1987	0	*	287	287	21	*	223	245	21	*	511	532
Klawock	1987	467	*	12,713	13,180	798	*	19,243	20,041	1,265	*	31,956	33,221
Klukwan	1987	0	*	80	80	0	*	114	114	0	*	194	194
Metlakatla	1987	4,096	*	8,901	12,997	0	*	3,541	3,541	4,096	*	12,442	16,538
Meyers Chuck	1987	0	*	0	0	0	*	3,075	3,075	0	*	3,075	3,075
Pelican	1987	2,108	*	5,149	7,257	2,930	*	7,900	10,830	5,038	*	13,049	18,088
Petersburg	1987	2,108	*	10,493	12,601	13,490	*	132,409	145,899	15,597	*	142,902	158,499
Point Baker	1987	0	*	0	0	862	*	766	1,628	862	*	766	1,628
Port Alexander	1987	0	*	118	118	708	*	3,577	4,285	708	*	3,695	4,403
Port Protection	1987	115	*	115	230	391	*	2,137	2,528	506	*	2,252	2,758
Saxman	1987	141	*	1,118	1,259	0	*	2,235	2,235	141	*	3,353	3,494
Sitka	1987	1,651	*	36,524	38,176	14,779	*	204,192	218,971	16,430	*	240,716	257,146
Skagway	1987	0	*	1,870	1,870	0	*	3,071	3,071	0	*	4,941	4,941
Tenakee Springs	1987	183	*	1,521	1,704	426	*	3,737	4,163	609	*	5,258	5,867
Thorne Bay	1987	0	*	0	0	13,179	*	11,451	24,629	13,179	*	11,451	24,629
Whale Pass	1987	0	*	74	74	106	*	1,250	1,357	106	*	1,325	1,431
Wrangell	1987	6,166	*	30,786	36,952	7,798	*	27,814	35,613	13,964	*	58,601	72,565
TOTAL 2C	**	**40,468**	*	**145,481**	**185,949**	**69,708**	*	**521,312**	**591,021**	**110,176**	*	**666,793**	**776,969**
	Percent Gear	*21.8%*	*	*78.2%*	*100.0%*	*11.8%*	*	*88.2%*	*100.0%*	*14.2%*	*	*85.8%*	*100.0%*

** In 2C, household surveys did not ask about "other non-commercial gear".*

		Harvests by Alaska Native Households				Harvests by Non-Native Households				Total Harvests by All Households			
	Survey Year	Removed from Commercial Gear	Other Non-Commercial Gear	Rod and Reel Gear	All Gear Types Combined	Removed from Commercial Gear	Other Non-Commercial Gear	Rod and Reel Gear	All Gear Types Combined	Removed from Commercial Gear	Other Non-Commercial Gear	Rod and Reel Gear	All Gear Types Combined
District 3A													
Akhiok	1992	41	1,845	0	1,886	0	0	32	32	41	1,845	32	1,918
Chenega Bay	1992	564	2,624	2,263	5,451	60	0	601	662	624	2,624	2,865	6,112
Cordova	1991	11,660	0	4,924	16,584	21,731	155	28,980	50,866	33,391	155	33,904	67,450
Karluk	1990	0	3,273	1,073	4,346	0	0	0	0	0	3,273	1,073	4,346
Kodiak City	1991	4,718	5,092	13,525	23,336	12,086	4,556	108,998	125,640	16,805	9,648	122,523	148,976
Larsen Bay	1993	1,873	2,495	1,888	6,255	0	114	0	114	1,873	2,609	1,888	6,370
Nanwalek	1991	0	1,953	4,903	6,856	0	0	953	953	0	1,953	5,856	7,809
Old Harbor	1991	2,240	10,575	2,798	15,612	0	0	2,171	2,171	2,240	10,575	4,968	17,783
Ouzinkie	1993	2,116	3,417	1,003	6,535	314	0	446	760	2,430	3,417	1,448	7,295
Port Graham	1991	2,212	6,445	3,102	11,759	0	0	0	0	2,212	6,445	3,102	11,759
Port Lions	1993	996	3,130	3,713	7,839	135	0	7,014	7,148	1,131	3,130	10,726	14,987
Seldovia	1991	3,115	110	3,038	6,262	1,407	125	9,555	11,087	4,522	235	12,593	17,349
Tatitlek	1991	122	1,134	2,145	3,401	0	0	0	0	122	1,134	2,145	3,401
Yakutat	1987	3,032	*	8,126	11,158	0	*	21,719	21,719	3,032	*	29,845	32,877
TOTAL 3A	**	**20,423**	**34,349**	**44,240**	**99,013**	**13,942**	**4,795**	**150,854**	**169,592**	**34,366**	**39,145**	**195,094**	**268,605**
	Percent Gear	*20.6%*	*34.7%*	*44.7%*	*100.0%*	*8.2%*	*2.8%*	*89.0%*	*100.0%*	*12.8%*	*14.6%*	*72.6%*	*100.0%*

** In Yakutat, household surveys did not ask about "other non-commercial gear".*

District 3B													
Chignik Bay	1991	1,438	3,227	560	5,225	374	0	0	374	1,812	3,227	560	5,599
Chignik Lagoon	1989	918	499	0	1,416	319	239	0	559	1,237	738	0	1,975
Chignik Lake	1991	2,889	1,932	0	4,821	0	527	0	527	2,889	2,459	0	5,348
Cold Bay	**	*	*	*	*	*	*	*	*	*	*	*	*
False Pass	1988	336	332	901	1,568	0	71	237	308	336	403	1,138	1,876
Ivanof Bay	1989	0	1,091	638	1,729	0	0	0	0	0	1,091	638	1,729
King Cove	1992	7,396	1,135	0	8,531	289	560	454	1,303	7,685	1,695	454	9,834
Nelson Lagoon	1987	0	0	0	0	0	0	0	0	0	0	0	0
Perryville	1989	420	4,772	1,506	6,698	0	626	0	626	420	5,399	1,506	7,324
Sand Point	1992	6,364	7,222	367	13,953	1,934	2,000	707	4,641	8,299	9,222	1,074	18,594
TOTAL 3B	**	**19,761**	**20,209**	**3,971**	**43,941**	**2,916**	**4,023**	**1,398**	**8,337**	**22,677**	**24,232**	**5,369**	**52,279**
	Percent Gear	*45.0%*	*46.0%*	*9.0%*	*100.0%*	*35.0%*	*48.3%*	*16.8%*	*100.0%*	*43.4%*	*46.4%*	*10.3%*	*100.0%*

** Halibut harvests undocumented.*

		Harvests by Alaska Native Households				*Harvests by Non-Native Households*				*Total Harvests by All Households*			
	Survey Year	*Removed from Commer Gear*	*Other Non-Comml Gear*	*Rod and Reel Gear*	*All Gear Types Combined*	*Removed from Commerc Gear*	*Other Non-Commerc Gear*	*Rod and Reel Gear*	*All Gear Types Combined*	*Removed from Commerc Gear*	*Other Non-Commerc Gear*	*Rod and Reel Gear*	All Gear Types Combined
District 4A-D													
Akutan	1990	2,504	8,082	548	11,133	422	0	0	422	2,926	8,082	548	11,556
Atka	1994	427	3,874	551	4,852	0	74	0	74	427	3,948	551	4,926
Nikolski	1990	0	11,836	0	11,836	0	0	0	0	0	11,836	0	11,836
St. George	1994	1,204	4,928	0	6,133	0	0	0	0	1,204	4,928	0	6,133
St. Paul	1994	18,672	48,411	0	67,083	0	1,271	125	1,396	18,672	49,682	125	68,479
Unalaska	1994	1,746	8,804	10,717	21,267	12,359	3,777	106,508	122,644	14,105	12,580	117,225	143,911
TOTAL 4A-D	**	**24,553**	**85,935**	**11,816**	**122,304**	**12,781**	**5,122**	**106,633**	**124,536**	**37,335**	**91,057**	**118,449**	**246,841**
	Percent Gear	*20.1%*	*70.3%*	*9.7%*	*100.0%*	*10.3%*	*4.1%*	*85.6%*	*100.0%*	*15.1%*	*36.9%*	*48.0%*	*100.0%*
District 4E													
Chefornak	Est		12,800		12,800				*		12,800		12,800
Gambell	**				*				*				**
Mekoryak	Est		7,080		7,080				*		7,080		7,080
Newtok	Est		8,280		8,280				*		8,280		8,280
Nightmute	Est		6,120		6,120				*		6,120		6,120
Savoonga	**				*				*				**
Toksook Bay	Est		16,800		16,800				*		16,800		16,800
Tununak	1986		40,754		40,754				*		40,754		40,754
Wales	**				*				*				**
Aleknagik	**				*				*				**
Clark's Point	**				*				*				**
Dillingham	1984				0				*				0
Egegik	1984	0	0	286	286				*	0	0	286	286
King Salmon	**				*				*				**
Kipnuk	**				*				*				**
Kongiganak	**				*				*				**
Levelock	1989		528		528				*		528		528
Manokotak	**				*				*				**
Naknek	**				*				*				**
Nome	**				*				*				**
Pilot Point	1987	229	0	70	299				*	229	0	70	299
Port Heiden	1987	0	197	0	197				*	0	197	0	197
South Naknek	1992	116	28	0	144				*	116	28	0	144
Alakanuk	**				*				*				**
Bethel	**				*				*				**

	Survey Year	Harvests by Alaska Native Households				Harvests by Non-Native Households				Total Harvests by All Households			
		Removed from Commercial Gear	Other Non-Commercial Gear	Rod and Reel Gear	All Gear Types Combined	Removed from Commercial Gear	Other Non-Commercial Gear	Rod and Reel Gear	All Gear Types Combined	Removed from Commercial Gear	Other Non-Commercial Gear	Rod and Reel Gear	All Gear Types Combined
Brevig Mission	**				*				*				**
Chevak	**				*				*				**
Eek	**				*				*				**
Elim	**				*				*				**
Emmonak	**				*				*				**
Golovin	**				*				*				**
Goodnews Bay	**				*				*				**
Hooper Bay	**				*				*				**
Kotlik	**				*				*				**
Koyuk	**				*				*				**
Kwigillingok	**				*				*				**
Napakiak	**				*				*				**
Napaskiak	**				*				*				**
Oscarville	**				*				*				**
Platinum	**				*				*				**
Quinhagak	**				*				*				**
Scammon Bay	**				*				*				**
Shaktoolik	**				*				*				**
Sheldon Point	**				*				*				**
St. Michael	**				*				*				**
Stebbins	**				*				*				**
Teller	**				*				*				**
Togiak	**				*				*				**
Tuntutuliak	**				*				*				**
Twin Hills	**				*				*				**
Ugashik	1987				0				0				0
Unalakleet	**				*				*				**
White Mountain	**				*				*				**
TOTAL 4E	**	**345**	**92,587**	**356**	**93,288**	**0**	**0**	**0**	**0**	**345**	**92,587**	**356**	**93,288**
	Percent Gear	*0.4%*	*99.2%*	*0.4%*	*100.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.4%*	*99.2%*	*0.4%*	*100.0%*

*** Halibut harvests undocumented.*

Note: Round Weight (Not Eviscerated, Head On) = Usable Wt (Eviscerated, Head Off)/.7519

Table 2.14. Halibut Harvests (Lbs Rd Wt) for Non-Commercial Use by Rural Residents and Halibut District

Source: Alaska Department of Fish and Game, Division of Subsistence Household Surveys

		Harvests by Alaska Native Households				Harvests by Non-Native Households				Total Harvests by All Households			
	Survey Year	Removed from Commercial Gear	Other Non-Commercial Gear	Rod and Reel Gear	All Gear Types Combined	Removed from Commercial Gear	Other Non-Commercial Gear	Rod and Reel Gear	All Gear Types Combined	Removed from Commercial Gear	Other Non-Commercial Gear	Rod and Reel Gear	All Gear Types Combined
District 2C	**	40,468	*	145,481	185,949	69,708	*	521,312	591,021	110,176	*	666,793	776,969
District 3A	**	20,423	34,349	44,240	99,013	13,942	4,795	150,854	169,592	34,366	39,145	195,094	268,605
District 3B	**	19,761	20,209	3,971	43,941	2,916	4,023	1,398	8,337	22,677	24,232	5,369	52,279
District 4A-D	**	24,553	85,935	11,816	122,304	12,781	5,122	106,633	124,536	37,335	91,057	118,449	246,841
District 4E	**	345	92,587	356	93,288	0	0	0	0	345	92,587	356	93,288
Total Rural Places		105,550	233,080	205,864	544,495	99,348	13,941	780,198	893,486	204,899	247,021	986,062	1,437,982
Percent Gear		*19.4%*	*42.8%*	*37.8%*	*100.0%*	*11.1%*	*1.6%*	*87.3%*	*100.0%*	*14.2%*	*17.2%*	*68.6%*	*100.0%*

Table 2.15. Per Capita Halibut Harvests (Lbs Rd Wt) for Non-Commercial Use by Residents of Alaska Rural Places

Source: Alaska Department of Fish and Game, Division of Subsistence Household Surveys

		Harvests by Alaska Native Households				Harvests by Non-Native Households				Total Harvests by All Households			
	Survey Year	Removed from Commercial Gear	Other Non-Commercial Gear	Rod and Reel Gear	All Gear Types Combined	Removed from Commercial Gear	Other Non-Commercial Gear	Rod and Reel Gear	All Gear Types Combined	Removed from Commercial Gear	Other Non-Commercial Gear	Rod and Reel Gear	All Gear Types Combined
District 2C													
Angoon	1987	6.7	*	18.7	25.4	0.6	*	54.1	54.6	5.6	*	25.6	31.2
Coffman Cove	1987	0.0	*	0.0	0.0	0.9	*	36.7	37.6	0.9	*	36.7	37.6
Craig	1987	3.0	*	20.7	23.7	3.4	*	11.5	15.0	3.3	*	14.5	17.8
Edna Bay	1987	0.0	*	0.0	0.0	25.4	*	58.6	84.0	25.4	*	58.6	84.0
Elfin Cove	1987	0.0	*	0.0	0.0	16.0	*	25.2	41.2	16.0	*	25.2	41.2
Gustavus	1987	0.0	*	101.6	101.6	3.8	*	74.8	78.6	3.6	*	79.7	83.3
Haines	1987	9.9	*	1.6	11.5	2.8	*	17.6	20.4	3.6	*	16.1	19.7
Hollis	1987	0.0	*	0.0	0.0	0.7	*	14.7	15.4	0.5	*	11.9	12.4
Hoonah	1987	23.0	*	11.0	34.0	3.8	*	66.2	70.0	16.7	*	33.1	49.8
Hydaburg	1987	11.8	*	17.1	28.9	0.0	*	68.9	68.9	10.9	*	20.9	31.8
Hyder	1987	0.0	*	0.0	0.0	17.3	*	45.9	63.3	17.3	*	45.9	63.3
Kake	1987	6.4	*	14.8	21.2	8.1	*	38.6	46.7	6.8	*	21.1	27.9
Kasaan	1987	0.0	*	13.7	13.7	1.1	*	11.8	12.9	0.5	*	12.8	13.3
Klawock	1987	1.1	*	28.8	29.8	2.2	*	53.4	55.6	1.6	*	40.4	42.0
Klukwan	1987	0.0	*	0.7	0.7	0.0	*	7.1	7.1	0.0	*	1.5	1.5
Metlakatla	1987	2.9	*	6.4	9.3	0.0	*	22.6	22.6	2.6	*	8.0	10.6
Meyers Chuck	1987	0.0	*	0.0	0.0	0.0	*	102.5	102.5	0.0	*	102.5	102.5
Pelican	1987	26.4	*	64.4	90.8	18.0	*	48.5	66.6	21.0	*	54.5	75.6
Petersburg	1987	3.2	*	15.7	18.9	4.2	*	41.7	45.9	4.2	*	38.2	42.4
Point Baker	1987	0.0	*	0.0	0.0	24.6	*	21.9	46.5	24.6	*	21.9	46.5
Port Alexander	1987	0.0	*	36.7	36.7	6.8	*	34.2	41.0	6.6	*	34.7	41.3
Port Protection	1987	53.2	*	53.2	106.4	7.0	*	38.1	45.0	8.7	*	38.6	47.3
Saxman	1987	0.6	*	4.9	5.5	0.0	*	58.1	58.1	0.5	*	13.0	13.5
Sitka	1987	0.8	*	17.4	18.1	2.4	*	33.5	35.9	2.0	*	29.9	31.9
Skagway	1987	0.0	*	32.3	32.3	0.0	*	5.8	5.8	0.0	*	8.5	8.5
Tenakee Springs	1987	31.9	*	266.0	297.9	4.8	*	42.0	46.8	6.4	*	55.5	62.0
Thorne Bay	1987	0.0	*	0.0	0.0	27.2	*	23.6	50.8	27.5	*	23.9	51.5
Whale Pass	1987	0.0	*	14.9	14.9	2.3	*	27.2	29.5	2.1	*	26.0	28.1
Wrangell	1987	4.6	*	23.1	27.7	4.9	*	17.6	22.6	4.9	*	20.6	25.6

** In 2C, household surveys did not ask about "other non-commercial gear".*

District 3A													
Akhiok	1992	0.6	24.6	0.0	25.2	0.0	0.0	6.3	6.3	0.5	23.1	0.4	24.0
Chenega Bay	1992	7.0	32.7	28.2	67.9	5.9	0.0	59.1	65.0	6.9	29.0	31.7	67.6
Cordova	1991	20.9	0.0	8.8	29.7	12.6	0.1	16.7	29.4	14.6	0.1	14.8	29.5
Karluk	1990	0.0	40.1	13.2	53.3	0.0	0.0	0.0	0.0	0.0	39.6	13.0	52.6
Kodiak City	1991	4.0	4.3	11.4	19.7	2.8	1.0	24.9	28.7	3.0	1.7	22.1	26.8

		Harvests by Alaska Native Households				Harvests by Non-Native Households				Total Harvests by All Households			
	Survey Year	Removed from Commercial Gear	Other Non-Commercial Gear	Rod and Reel Gear	All Gear Types Combined	Removed from Commercial Gear	Other Non-Commercial Gear	Rod and Reel Gear	All Gear Types Combined	Removed from Commercial Gear	Other Non-Commercial Gear	Rod and Reel Gear	All Gear Types Combined
Larsen Bay	1993	15.8	21.0	15.9	52.6	0.0	10.4	0.0	10.4	14.4	20.1	14.5	49.1

Nanwalek	1991	0.0	12.8	32.1	44.9	0.0	0.0	112.3	112.3	0.0	12.1	36.3	48.5
Old Harbor	1991	11.7	55.2	14.6	81.4	0.0	0.0	86.3	86.3	10.3	48.8	22.9	82.0
Ouzinkie	1993	9.9	16.0	4.7	30.5	15.9	0.0	22.5	38.4	10.4	14.6	6.2	31.2
Port Graham	1991	15.1	43.9	21.1	80.1	0.0	0.0	0.0	0.0	13.7	40.0	19.3	73.0
Port Lions	1993	5.4	16.9	20.1	42.4	2.6	0.0	136.0	138.7	4.8	13.2	45.4	63.4
Seldovia	1991	17.0	0.6	16.5	34.1	5.7	0.5	38.7	44.9	15.9	0.3	50.4	66.6
Tatitlek	1991	1.2	10.9	20.7	32.8	0.0	0.0	0.0	0.0	1.1	10.5	19.9	31.5
Yakutat	1987	8.4	*	22.4	30.8	0.0	*	94.3	94.3	5.1	*	50.7	55.8

** In Yakutat, household surveys did not ask about "other non-commercial gear".*

District 3B

Chignik Bay	1991	20.3	45.5	7.9	73.7	38.2	0.0	0.0	38.2	22.5	40.0	6.9	69.4
Chignik Lagoon	1989	31.6	17.2	0.0	48.8	26.6	19.9	0.0	46.5	30.2	18.0	0.0	48.2
Chignik Lake	1991	23.9	16.0	0.0	39.8	0.0	54.7	0.0	54.7	22.1	18.8	0.0	40.9
Cold Bay	**	*	*	*	*	*	*	*	*	*	*	*	*
False Pass	1988	5.5	5.4	14.6	25.5	0.0	9.2	30.8	40.0	4.8	5.8	16.4	27.1
Ivanof Bay	1989	0.0	34.1	19.9	54.0	0.0	0.0	0.0	0.0	0.0	34.1	19.9	54.0
King Cove	1992	17.0	2.6	0.0	19.6	2.3	4.5	3.7	10.5	13.7	3.0	0.8	17.6
Nelson Lagoon	1987	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Perryville	1989	3.8	43.8	13.8	61.4	0.0	90.9	0.0	90.9	3.6	46.6	13.0	63.2
Sand Point	1992	14.2	16.2	0.8	31.2	12.2	12.6	4.5	29.2	13.7	15.2	1.8	30.7

District 4A-D

Akutan	1990	25.9	83.6	5.7	115.1	68.1	0.0	0.0	68.1	28.8	79.5	5.4	113.7
Atka	1994	49.9	5.5	7.1	62.5	0.0	10.3	0.0	10.3	5.0	46.5	6.5	58.0
Nikolski	1990	0.0	295.9	0.0	295.9	0.0	0.0	0.0	0.0	0.0	243.7	0.0	243.7
St. George	1994	31.4	7.7	0.0	39.1	0.0	0.0	0.0	0.0	6.7	27.5	0.0	34.2
St. Paul	1994	120.8	46.6	0.0	167.4	0.0	13.8	1.4	15.2	37.9	100.8	0.3	139.0
Unalaska	1994	31.1	6.2	37.9	75.2	8.0	2.5	69.1	79.5	7.7	6.9	64.2	78.8

District 4E

Chefornak	Est		40.0		40.0						40.0		40.0
Gambell	**												
Mekoryak	Est		40.0		40.0						40.0		40.0
Newtok	Est		40.0		40.0						40.0		40.0
Nightmute	Est		40.0		40.0						40.0		40.0
Savoonga	**												
Toksook Bay	Est		40.0		40.0						40.0		40.0
Tununak	1986		124.3		124.3						124.3		124.3
Wales	**												

		Harvests by Alaska Native Households				Harvests by Non-Native Households				Total Harvests by All Households			
	Survey Year	Removed from Commercial Gear	Other Non-Commercial Gear	Rod and Reel Gear	All Gear Types Combined	Removed from Commercial Gear	Other Non-Commercial Gear	Rod and Reel Gear	All Gear Types Combined	Removed from Commercial Gear	Other Non-Commercial Gear	Rod and Reel Gear	All Gear Types Combined
Aleknagik	**												
Clark's Point	**												
Dillingham	1984				0.0								
Egegik	1984			2.9	2.9							2.9	2.9
King Salmon	**												
Kipnuk	**												
Kongiganak	**												

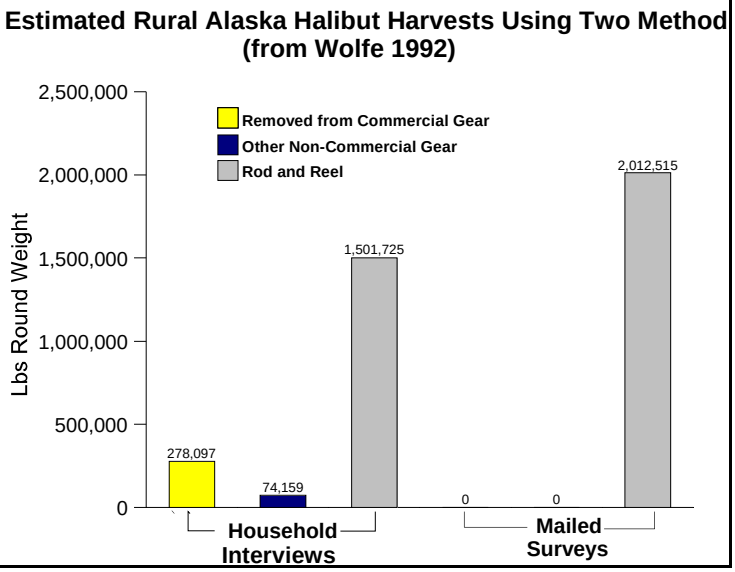
Levelock	1989		4.9		4.9					4.9		4.9
Manokotak	**											
Naknek	**											
Nome	**											
Pilot Point	1987	3.5		0.1	4.6			3.5		0.1	4.6	
Port Heiden	1987	1.9			1.9			1.9			1.9	
South Naknek	1992	1.1	0.3		1.4			1.1	0.3		1.4	
Alakanuk	**											
Bethel	**											
Brevig Mission	**											
Chevak	**											
Eek	**											
Elim	**											
Emmonak	**											
Golovin	**											
Goodnews Bay	**											
Hooper Bay	**											
Kotlik	**											
Koyuk	**											
Kwigillingok	**											
Napakiak	**											
Napaskiak	**											
Oscarville	**											
Platinum	**											
Quinhagak	**											
Scammon Bay	**											
Shaktoolik	**											
Sheldon Point	**											
St. Michael	**											
Stebbins	**											
Teller	**											
Togiak	**											
Tuntutuliak	**											
Twin Hills	**											
Ugashik	1987				0.0							0.0
Unalakleet	**											
White Mountain	**											

*** Halibut harvests undocumented. Note: Round Weight (Not Eviscerated, Head On) = Usable Wt (Eviscerated, Head Off)/.7519*

State regulations recognize subsistence, personal use, commercial, and sport uses of halibut. They classify all halibut harvested with a rod-and-reel as a sport harvest. Persons harvesting halibut with a rod-and-reel are required to obtain an Alaskan sport fishing license. However, most halibut fishers in rural Alaskan communities do not recognize their activities to be recreational in nature, but as subsistence or personal use, regardless of the gear type used to obtain it. The extent to which rural fisheries actually obtain sport fishing licenses to harvest halibut with rod and reels has never been assessed, or the extent to which subsistence patterns are constrained by the relatively restrictive sport fish bag limit (two fish per day). The rural halibut harvest with rod and reel is supposed to be counted through a statewide annual mailed survey to holders of sport fishing licenses by the ADF&G Division of Sport Fish. Whether this survey adequately counts the rural take has been subject to debate in recent years, as discussed further below.

Halibut harvested with hand-held lines with no more than two hooks attached is classified as a subsistence or personal use harvest in State regulations, if the halibut is taken by state residents in waters open for subsistence fishing. A resident is not required to obtain a fishing license or a fishing permit to harvest halibut for subsistence uses.

Figure 2.3.



As stated above, longlines are also set for noncommercial halibut in many rural communities, but are not legal gear under State regulations. There is currently no system for counting this harvest on an annual basis or to identify the numbers and locations of subsistence halibut fishers in Alaska. The harvest of halibut with these gear types has been estimated only for certain communities and years by the Division of Subsistence household surveys (Figure 2.3). State regulations also recognize a "personal use" harvest of halibut by residents. The personal use designation has shifted over the past decade, from halibut fishing with hand-held lines by residents of non-rural areas (circa 1982), to halibut fishing by state residents in non-subsistence areas (circa 1990), to halibut in areas without customary and traditional use determinations for halibut (currently). Personal use fishers are required to obtain a sport fishing license.

Halibut retained from a commercial catch for home use is allowed under State subsistence regulations. Halibut appears to be taken in a number of commercial fishing contexts, such as commercial salmon, black cod, rockfish, king and tanner crab, and halibut fishing. The amount of halibut retained for home use during the commercial halibut fishing is likely to have changed with the new IFQ system. The harvest of halibut retained from commercial gear for home use has been estimated only for certain rural communities and years by the Division of Subsistence household surveys (Table 2.13). Current IFQ and CDQ regulations require "take home' fish to be counted against IFQs and CDQs; however Federal regulations exempt Area 4E CDQ fishermen who are allowed to retain undersized halibut while CDQ fishing. In June 1997, the Council approved an action which allowed Area 4E CDQ fishermen to retain undersized halibut while commercial fishing. In 1998 and again in 2000, the IPHC approved the retention of halibut less than legal size for the CDQ fisheries in Area 4E, for a two-year period and requires the manager of any CDQ organization that authorizes halibut harvest in Area 4E to provide accounting of the number and weight of undersized halibut taken and retained in these fisheries. The report must also include details of the methodology used for collection of such data. In 1998 and 1999, the reported catch was 3,590 lb and 7,900 lb (net weight) (Appendix III).

In 1993, the IPHC was unsuccessful in obtaining estimates of retained takes during the commercial halibut fishery through log books by (Trumble 1993). For 1992, 1993, and 1994, the method for estimating the size of the noncommercial halibut harvest has been debated by staff of the IPHC and ADF&G (cf. Hoag 1993, Trumble 1993, Wolfe 1992). In 1992, extrapolating from ADF&G information sources, IPHC staff estimated the "subsistence" halibut catch in Alaska at 2.95 million lb, of which 1.95 million lb were fish not counted by the sport fish harvest surveys. After discussions with ADF&G staff at the 1992 annual meeting, IPHC staff agreed the estimate of the uncounted catch was too high, and subsequently used an estimate of 1.0 million lb, a figure that ADF&G argued was still three times too high (IPHC 1993:25-26). ADF&G estimated the annual rural halibut harvest by gear type to be as follows: 278,000 lb retained from commercial gear; 74,000 lb from other noncommercial gear; and between 1.5-2.0 million lb from rod and

reel (see Fig. 1). In 1993, using a different extrapolation method, IPHC staff estimated an uncounted annual noncommercial halibut harvest of 800,000 lb for fishers in Alaska waters, of which 600,000 lb were taken by rural residents, while ADF&G staff offered an estimate of 350,000 lb (Trumble 1993). The disagreements in estimates result from confusion over the basic characteristic of the rural fishery and ambiguity in what available data sets portray. The estimate of the rural take must be made by compositing information from the mailed survey of sport anglers and intermittent rural household interviews, extrapolating the data to unsurveyed years and communities. An analysis of the expansion methodology pointed out a number of untested assumptions (Wolfe 1992).

One untested assumption is that halibut harvests of rural fishers using hook and line are covered by the mailed survey of sport anglers conducted by the Division of Sport Fish, ADF&G (cf. Mills 1992, Wolfe 1992). This annual questionnaire and reminders are mailed to a random sample of persons who purchased Alaska sport fishing licenses the previous year. The mailed questionnaire asks information on the number of anglers, trips, days fished, and catch by location for all sport species. Information is expanded to the total estimated number of sport fishing license holders to arrive at total Alaska harvest estimates. The mailed harvest survey provides a reliable estimate for rural communities if two conditions are met: halibut anglers in rural areas obtain fishing licenses, and halibut anglers in rural areas respond to mailed surveys at the same rates as halibut anglers in urban areas. Each of these conditions are untested. It is possible that many halibut anglers in rural Alaska areas do not obtain sport fishing licenses, because they do not consider their harvest activities to be sport fishing. Fishers who do not obtain licenses will be missed as part of the sampling universe, will not be surveyed, and will not be expanded to in statistical analysis. It is also probable that fishers from small rural communities do not respond to mailed surveys at the same rates as urban anglers. This may be particularly true of Alaska Native fishers who have less cultural experience with complex mailed surveys. The poorer response rate is likely to introduce a bias in the extrapolated harvest, as fishing patterns by urban anglers differ considerably from those of small rural communities.

A second set of assumptions pertain to extrapolating from the harvest data set collected from household interviews conducted by the ADF&G Division of Subsistence. One problem with this data set is the age of the data for particular areas. In particular, the last household interviews in rural southeast Alaska communities, a major area for halibut fishing, were conducted in 1987. Extrapolating old harvests to current fishing conditions is only valid if there have been no major changes in the fisheries. This assumption has not been examined by repeat interviews. A second problem is that some of the older interviews did not consistently ask about harvests from all gear types. For instance, in the 1987 southeast Alaska interviews, fishers were asked about retaining halibut from commercial harvests and about fishing with rod and reel, but were not asked about harvests with long line hooks set outside the commercial fishing season. Because of this missing information, the percentage of take by gear type used to extrapolate the harvest is suspect (that is a report of 0 lb reported as subsistence halibut removals is obviously not valid). Some rural communities have never been surveyed, such as the Yup'ik communities of the Nelson and Nunivak islands area in western Alaska. A third problem is how to expand from surveyed to unsurveyed communities. The IPHC expansion of rural harvests to certain unsurveyed areas (such as the road-connected Southcentral area) resulted in overestimates of the noncommercial takes. Communities should be grouped into strata by catch characteristics and expansion should be done for each stratum separately to reduce this expansion bias. However, the basis for these groupings has not been established.

The removals of Pacific halibut from the population that are accounted for in the stock assessment include commercial and sport catch, bycatch, wastage and personal use. With the implementation of the IFQ fishery, the take-home fish or the amount recorded as “retained weight” is now accounted for as part of a person’s IFQ. Personal use fish will only include the non-commercial and non-sport halibut, from a variety of sources for which little documented data are available. Sources include sanctioned Indian food fish in Canada, sublegal halibut retained in Area 4E under IPHC regulations, rod and reel catch not documented in the sport

catch, illegally-set commercial gear, and illegally-retained bycatch in other fisheries. Since 1995, all take-home fish from the commercial halibut fisheries has been included in the commercial catch and not under personal use.

Methodology for estimating subsistence catches in Alaska was developed in 1998 by Trumble (1999), based on information gathered by household interviews and postal surveys conducted by the Alaska Department of Fish and Game (ADF&G) and reported in the Council's 1997 EA/RIR/IRFA for defining halibut subsistence (Table 2.13). The interview and surveys results were adjusted to account for some amount of overlap in the reporting of sport fishery catches and for areas where no data were collected.

As noted earlier, current data do not allow separation of subsistence, personal use, and sport landings, as these categories are not defined. Of the categories in Table 2.13, "removed from commercial gear" is already counted under IFQ/CDQ landings. "Other non-commercial landings" clearly belong in the personal use category. As a place holder value for Area 2C where no estimate exists, IPHC used the lowest other values, from Area 3B, of 20,209 pounds (round weight) for Native households and 4,023 pounds for non-native households. Rod and reel landings are only legal gear for halibut sportfishing. NPFMC (1997) presented two estimates of rod and reel catch by urban Alaskans. An estimate from household interviews totaled 1.5 million pounds round weight, while one from the sport fish postal survey totaled 2.0 million pounds round weight. The postal survey is considered the best available information for the estimate of total sport harvest, but the results likely become less precise as the sample size decreases. For this report, the household survey interview was used as the best estimate of urban rod and reel halibut catch.

2.4 Biological Concerns

The IPHC is tasked with the management of Pacific halibut related to biological or conservation issues. In this regard, the IPHC has found personal use halibut harvests troublesome since these harvests are not strictly monitored. It is apparent from the lack of reported subsistence landings from Area 2C, that current reporting does not accurately reflect current levels of halibut subsistence removals. Some harvests taken on sportfishing gear by Alaska Native in rural communities have been traditionally sold and some harvests to feed families in rural, coastal Alaska Native villages by tribal members are counted as sport harvests. All halibut takes are reported as either commercial or sport harvests. Since "take home" harvests from commercial gear are required to be counted against IFQs and all other non-commercial harvests are limited to the sportfish bag limit and gear restrictions, the confounding of subsistence statistics is not surprising. IPHC and ADF&G are currently consulting on an improved determination of "personal use" removals. However, since all harvests are accounted for, although misreported, it has not been considered a threat to the biological resource. This conclusion is only valid at the present high level of abundance. When the resource declines, the subsistence proportion will rise accordingly and the impact of the underreporting increases significantly. Current estimates of halibut subsistence removals are estimated at less than a few percent of total removals and are discussed further in Section 3. Improved estimates of halibut removals for personal use/sportfish/subsistence should result from the proposed Council action.

3.0 DESCRIPTION OF THE SOCIAL ENVIRONMENT

This chapter describes the dependence of fishermen and communities on the halibut fishery, with special attention given to the differing economies found in rural and urban communities. The Council's choice for a preferred alternative for defining halibut subsistence in Alaska will result in a variety of effects on those who participate in halibut fisheries and to the communities that are involved in them. Of particular concern are the expected effects on the participation in the fisheries by residents of rural areas adjacent to subsistence fishing grounds.

The material presented in this chapter is adapted from the public review draft of the EIS/RIR/IRFA for the Proposed Individual Fishing Quota Management Alternatives for the Halibut Fisheries in the GOA and BSAI (NPFMC 1991). It has been updated using ADF&G Subsistence Division household surveys, where available. More specific information on individual Alaskan coastal communities can be found in *Faces of the Fisheries* prepared for the Council's 'Comprehensive Rationalization' Process in 1994 and a series of 54 reports that assess the holdings of restricted use-privileges by persons from various Gulf of Alaska coastal communities and urban areas (CFEC1999).

Information considered in this chapter has been drawn from published materials and the data files of CFEC, Alaska Department of Fish and Game Subsistence Division (Subsistence Division), and the International Pacific Halibut Commission (IPHC). Additional data has been provided by the U.S. Department of Agriculture [Forest Service (USFS)], U.S. Department of Commerce [Bureau of Census and National Marine Fisheries Service (NMFS)], and the U.S. Department of Interior [Minerals Management Service (MMS) and Park Service].

3.1 The Commercial Halibut Fishery

Alaskan rural communities, in which the preponderance of smaller vessels are based, are socially and culturally tied to local fishing areas. In the case of Alaska Natives these areas have been defined since before the start of the commercial halibut fishery in 1878 (Betts and Wolfe, 1990). Thus investment in the smaller vessels is related to local operating areas, and this segment of the fleet is less mobile and thus less able to seek out new fishing areas. In 1990, nearly 40% of vessels fishing for halibut were less than 36 feet in length and their proportion of the total catch landed was less than 9%. These smaller vessels totaled 1,811 in 1990, increasing 32% from 1984, mostly in vessels between 31 and 35 feet. Vessels between 36 and 55 ft more than doubled to 1,955 by 1990. Larger vessels greater than 56 feet tripled to 728 in 1990.

Some rural communities, and some urban communities, engage in a seasonal round of fisheries for commercial and subsistence purposes. Typically these fisheries include salmon, halibut, herring, crab, sablefish and rockfish. The fishermen who participate in the halibut fishery usually fish commercially in at least two other fisheries (Langdon and Miller 1984). With the increasing restrictions on days fished in the open access halibut fishery, and occasional conflicts with seasonal openings in other fisheries, the small boat fleet took fewer halibut in the open access commercial fishery because they are less mobile (and unable to fish in other areas) and have less fishing power. Heavy weather on fishing days also restricted the activities of the small boat fleet during halibut openings. The same segment of the fleet is also active in the subsistence fisheries, often using "commercial" gear, and halibut harvests in the subsistence sector are often substantial. Most rural Alaskan communities have mixed cash-subsistence economies; of which neither sector is sufficient to support the community's population. Rural communities which experience a loss of income from commercial fishing experience disruption in the balance between cash economy and subsistence economy activities, to the detriment of the local economy, society, and traditional culture (R.J. Wolfe 1991, pers. commun. to P. Fricke). Alaskan rural communities strike a balance in their mixed cash-subsistence economy in order to maintain community viability (Wolfe and Walker 1987).

From a review of communities involved in the commercial or subsistence use of halibut, 115 Alaskan communities were found to have active participants in the fishery. Of these Alaskan communities, 101 were rural with mixed cash-subsistence economies (as determined by the Federal Subsistence Board), while 14 communities were urban centers with cash-based economies. In Alaska, Wolfe and Bosworth (1990) estimated that approximately 80% of the population lives in urban areas, principally in and around Anchorage, Fairbanks, Juneau, the Kenai Peninsula, Kodiak City, and Sitka. One-fifth of the population, or some 110,000 people, lives in mixed-economy rural communities. Of this rural population, some 50,000 are Alaska Natives while 60,000 are non-Natives.

Participation in the fishery varies from IPHC region to region. Overall, Langdon and Miller (1984) reported that one-fifth of their study sample of fishermen in 1982 derived 100% of their gross fishing income from the halibut fishery. Given the length of seasons in the open access fishery, measured in days and hours, it can be surmised that these fishermen were part-time fishermen, who held other jobs. Area 2C, in particular, had this level of involvement in the halibut fishery but Area 3A also had a number of halibut-only fishermen (Wilkinson 1990). Both areas have significant numbers of small boats under 31 feet in length, and access to alternative employment. Wolfe (1991) reported that families in mixed cash-subsistence economies typically patch together multiple income streams because individual sources of income tend to be small and insecure. Langdon and Miller found that 45% of commercial halibut fishermen worked solely in the fishing industry; 55% of the 1982 sample had at least one shore-side job.

Langdon and Miller (1984) reported the average size of crew on halibut vessels, including captain, to be 3.7 persons. Noting that the structure of the fleet has changed and there are more larger vessels than before, but also that there have been technological advances in fishing gear and vessel design, it is estimated that there were some 16,920 fishermen active in the fishery in 1990. Average plant employment in Kodiak per day/shift was estimated to be 60 persons (Fricke 1991) and the average involvement of plants in processing halibut was four days of processing for every day of fishing activity (Impact Assessment Inc. 1991a: Kodiak 21; Fricke 1991). Thus, a “guesstimate” of involvement of processing workers in the 176 plants reported handling halibut from the 36 days of halibut fishing in 1990 can be derived. This “guesstimate” is that some 10,560 plant employees processed halibut at the point of landing and that the equivalent of 2,315 person-years of employment was generated.

The principal gear used in the directed halibut fishery is longline gear, but there are a number of hand and power trollers in the fishery in Area 2C. Longline vessels commonly fish for sablefish, Pacific cod, rockfish and halibut fisheries. Many vessels also fish for salmon in season. The dominance of the 35-55 feet-long size class can be attributed to the State of Alaska's 58-feet length overall rule for salmon seiners in the Gulf of Alaska. Similarly, the dominance of the 31-35 feet-long class in Area 4E (East Bering Sea) can be attributed to the 32-feet length-overall rule for Bristol Bay salmon seiners. Seine vessels, typically with a forward house, can be easily rigged for longlining (Bell 1981) but the traditional halibut schooner is less able to engage in the salmon fishery. The Alaska Native halibut fishery traditionally used hand lines with one or two hooks, or short skates of longline fished from canoes or bidarkas. Today, handlines are used in the commercial halibut fishery by Alaska Natives in only a few places (for example, Nelson Island) with most Alaska Native fishermen using long line gear from small boats. Handlines continue to be used in the subsistence halibut fishery. Alaska Native fishermen traditionally also trolled with their hand lines, and some modern salmon trollers also use troll gear for halibut today (Kelley 1991). Since the key to present-day fisheries in the waters off Alaska is flexibility in gear and vessel configuration, combination vessels designed for multiple gears and fisheries have evolved and now dominate the fleet.

3.1.1. Participation in the Fishery

In this section, information on participation in the fishery is summarized by IPHC halibut area. Overall, however, participation in the halibut fishery has been reduced under the IFQ program (CFEC 1999). Initial QS issuees totaled 7,391 at the start of the initial IFQ season in 1995, and were consolidated to 6,729 QS holders by the end of the season; a reduction of 9% as a result of voluntary transactions in areas 2C-4B. No transactions occurred in areas 4C-E. Alaskans represented the majority of QS both at the start and end of the 1995 season, ranging from 31% of QS holders in Area 4D to 91% in Area 4E, although the overall number of QS holders declined.

3.1.1.1 Southeast Alaska (Area 2C)

Area 2C extends northwest from the United States boundary line in the Dixon Passage to Cape Spencer. The Alexander Archipelago and an adjacent narrow coastal strip of mountains, glaciers, and icefields comprise this region of Alaska. With the exception of roads linking Haines and Skagway with the interior, transportation in Area 2C is by air or sea. The Alaskan ferry system, or "marine highway," links the majority of communities with Haines and Skagway to the north, and Prince Rupert, B.C. and Bellingham, WA to the south. The region's climate is relatively mild and wet, and supports extensive coastal forests. Most of the land area in Area 2C is held by USFS in the Tongass National Forest, but the Park Service also has extensive holdings of land in the Glacier Bay National Park. The activities of both agencies affect land and marine resource use by the approximately 65,000 residents of Area 2C.

While the region's major population center (Juneau) is fully integrated into the national economy, most of the region's smaller communities are supported by a traditional mixed cash-subsistence economy, in which there co-exist a subsistence sector and a market sector (Wolfe and Walker 1987). In the region's market sector economy, four industries dominate: commercial fishing, timber products, tourism, and employment generated by State oil revenues (Alaska Dept. of Fish and Game 1989). State, local, and Federal government employment is of considerable importance, particularly in the vicinity of Juneau, the State capital. In Area 2C, the commercial fishing industry employed 25% of the labor force (Langdon and Miller 1983). During the 1980s, logging or timber products were important sources of employment (i.e., over 25%) in Coffman Cove, Craig, Hoonah, Hydaburg, Klawock, North Whale Pass, and Thome Bay. Fish processing plants are located in the predominantly non-Native communities of Ketchikan, Craig, Petersburg, Wrangell, Sitka, Juneau, Gustavus, and Pelican, and seasonal plants are in six other communities. In the ten predominantly Alaska Native and nine non-Native rural communities of southeast Alaska, commercial fishing is an important element in the cash or market sector of the local economy. During the 1980s, in the subsistence sector of the regional economy, about 4.5 million pounds of wild foods were processed annually by rural communities for family consumption. Of these foods about 51% was fish, including halibut; 27% was game; 19% was marine invertebrates, and 3% marine mammals.

Commercial and subsistence fishing for halibut are found in nearly every community in southeast Alaska (Table 3.1). In 1987, subsistence harvest of fish and shellfish included 235,000 pounds of Dungeness crab, 565,000 pounds of halibut, and 131,000 salmon. The take of subsistence halibut was equivalent to 5% of the commercial harvest in 1987 (Alaska Dept. of Fish and Game 1989). Subsistence harvest information is available for all Southeast Alaskan communities except Juneau and Ketchikan for which surveys of subsistence harvest and use have not been carried out. The most important commercial fishery to local communities, whose residents have limited entry permits, is that for salmon. Halibut fishing has occupied an important place in the spring, fall and winter fisheries, and herring, crab, sablefish, and rockfish complement the fisheries for halibut and salmon in the seasonal round of activities in Area 2C.

In 1984, 55% of commercial vessels fishing in Area 2C for halibut were less than 36 feet in length; this proportion of the fleet had decreased to 44.5% in 1990 although the absolute number of fishing boats in this size class increased to 662 (Table 3.2). The catch of the smallest boats, less than 26 feet long, totaled 1,195

pounds (3.8%) in 1990. Boats less than 26 feet long form 21% of Area 2Cs fleet. Vessels between 36 and 55 feet long formed 49% of the fleet and took 68% of the catch in 1990, with average individual boat catches of 9,101 pounds in 1990. These vessels, and larger classes too, were typically mobile within the Archipelago and would then move to the west following the sablefish and halibut openings in Area 3A. It has been estimated that approximately 12% of the fleet which longlines for sablefish and halibut in the southeast Alaska and East Yakutat districts moved further west as the open access season advanced and continued longlining in the West Yakutat, Kodiak, and southwest districts (J. Gharrett, pers. commun. to P. Fricke 1991). The smaller vessels (less than 30 feet in length) rarely fished outside southeast Alaska.

Table 3.1 1990 Population, Distribution of Halibut Permits and Landings in Southeast Alaskan Communities (Area 2C)

			Halibut		
Community	Pop. N	Native Pop %	Permits N	Commerc lb	Subsist lb*
Juneau	26,751	11.2	213	390,151	n/a
Ketchikan	13,459	11.1	128	1,036,245	n/a
Sitka	8,588	21.4	278	3,638,138	206,112
Petersburg	3,207	10.9	215	2,283,585	102,303
Wrangell	2,479	17.9	109	556,897	47,597
Metlakatla	1,407	80.2	27	234,650	11,256
Craig	1,260	32.3	65	677,596	16,884
Haines	1,238	18.9	74	44,198	18,322
Hoonah	795	79.9	59	703,747	29,733
Klawock	722	66.0	13	**	22,815
Kake	700	84.1	43	**	14,700
Skagway	692	4.6	2	**	4,429
Angoon	638	88.6	53	**	14,929
Thorne Bay	569	2.8	6	**	22,020
Hydaburg	384	84.9	28	**	9,178
Saxman	369	71.1	#	**	3,727
Gustavus	258	2.0	17	39,327	16,202
Pelican	222	18.3	40	1,132,088	12,632
Coffman Cove	186	0.0		**	5,264
Klukwan	129	83.7	#	**	150
Port Alexander	119	5.8	17	**	3,713
Hollis	111	18.0		**	1,032
Hyder	99	1.3	2	**	4,712
Tenakee Springs	94	5.1	5	**	4,362
Edna Bay	86	0.0	23	**	5,452
North Whale Pass	75	0.0	0	**	1,586
Port Protection	62	5.6	#	**	2,220
Elfin Cove	57	7.1	19	**	1,767
Kasaan	54	56.0	1	**	540
Point Baker	39	5.6	18	**	1,365
Meyers Chuck	37	0.0	5	**	2,853
Excursion Inlet##				1,052,386	
Killisnoo##				245	
Misc. SE Alaska Ports				3,676	
Totals	64,886		1,460	11,792,929	

Population data are from the 1990 Census 1990 permit and commercial landings data are from IPHC files.
* = 1990 Subsistence landings data are estimated from Alaska Dept. of Fish and Game baseline studies for 1987; estimated landings are in pounds of dressed fish (H&G).
** = Any commercial landings were at other ports.
n/a = Data not available.
= IPHC permit data are based upon postal zip codes; many Alaskan communities share zip codes, and CFEC data indicate that halibut permit holders reported elsewhere reside here.
= These are cannery/floating processor sites.

Table 3.2 Fleet Composition, Size Class, and Percent of Catch in the Halibut Fishery Off Alaska, 1990 (Area 2C)				
		1990		
IPHC Area	Vessel Size (ft)	N	% Fleet	% Catch
2C	<26'	308	20.7	3.8
	26-30'	132	8.9	3.0
	31-35'	222	14.9	8.7
	36-55'	722	48.5	67.8
	56'>	84	5.6	16.2
	n/a	22	1.5	0.6
Area, vessel, and catch data provided by IPHC 1991; all%ages are rounded n/a = Vessel size data not available for these vessels.				

Fishermen

Langdon and Miller's survey of fishermen found that crew size on vessels in Area 2C varied with the rural or urban nature of the community in which the fishermen resided. For urban communities, from which the larger vessels fished, crew size including captain averaged 3.6 persons in 1982, while for rural communities crew size averaged 3.0 persons. If crew sizes remained equivalent to those in 1982, it is estimated that 4,768 fishermen fished commercially for halibut in 1990 in Area 2C. At the start of the initial IFQ season in 1995, 1,963 Alaskans were awarded QS in Area 2C; by the end of the season 191 Alaskan QS holders transferred their shares to other individuals, leaving 1,772 active fishermen in the fishery. Crew sizes were reported to have declined, as QS holders pooled their IFQs and fished on fewer vessels during the longer, eight month season. The total number of QS holders decreased by 29% between initial issuance and end-of-year 1998 (CFEC 1999).

A similar disparity between urban and rural residence was found in kinship and crew patterns; Langdon and Miller found that rural crews were more likely to be formed with kinfolks than those fishing from urban communities. It should be noted here that crews from Alaska Native villages tend to be larger, and with greater involvement of kin, because of the cultural basis of fishing as a family economic activity and the cultural pattern of initiating young people into traditional occupations. Since the family is the “economic firm” in subsistence activities (a “domestic mode of production”), transfer of this pattern of activity to the commercial fishery is appropriate both culturally and economically in the mixed economy of rural communities.

The fishermen of southeast Alaska participate in a number of commercial fisheries. Langdon and Miller's data showed that halibut fishermen fished for a mean of 2.62 species, with a median of 2.48 species, during the fishing year. A 45-year old non-Native fisherman, self-described as a “seiner,” from Angoon reported his seasonal round of fishing in 1990 as follows: “January: bait; February: crab; March: sac roe [herring], brown crab, and get ready for black cod; April, May: black cod (2 weeks here, 6 weeks off Seward coast); June: halibut (hits third opening), get ready for seining; July, August: seining; September: one day black cod, halibut, and usually fall dogs [salmon]” (Martha Betts 1991). According to Betts (1991), the pattern described by the seiner above is atypical; he fishes for crab and black cod “outside” the islands of the Alexander Archipelago while most seiners do not. Angoon and Kake fishermen, mostly Tlingit, seine for salmon, hand-troll for salmon (during seine closures) using skiffs, and long-line for halibut using seine boats. Some fishermen also use their boats as halibut tenders for other fishermen fishing from skiffs.

Langdon and Miller (1983) reported that only 7.9% of the fishermen interviewed in Area 2C fished in just one fishery, while 42.9% fished in two directed fisheries, typically halibut and salmon. One-fifth of the fishermen in Langdon and Miller's sample fished for four or more species during the course of the year.

The demography of fishermen varies with residence in rural or urban communities. The mean age of all fishermen surveyed by Langdon and Miller in 1982 was 38.8 years, with a median of 34.6 years. Fishermen from urban communities were younger, however, with an average age of 37 years compared to the mean age of 44 years in rural communities. Urban fishermen had completed more years of formal education than those from rural communities in Langdon and Miller's sample; 13.1 years of schooling compared to 10.1 years. Both of these indicators suggest that life in urban communities offers more opportunities for training and employment.

Income from the fishery varied considerably. For the communities with a mixed cash-subsistence economy, the halibut fishery is very important. A 50-year old Tlingit hand troller from Angoon, reporting on his 1990 season, said that "Angoon just wants to make living, not be huge highliners . . . one quarter of total income from fishery is from halibut. It's an important fishery. There are three 24-hour openings, whole summer of trolling [for salmon] won't equal what you make on halibut, considering costs" (Martha Betts 1991). As shown in Table 3.3, the mean personal taxable income in the rural community of Angoon is approximately half that of Juneau, emphasizing the importance of earnings from the commercial fishery to the small communities of Area 2C.

Table 3.3: Population, Mean Household Size, and Mean Taxable Income for Selected Communities with Halibut Harvests (Area 2C)

Community	Population (N)	Native Pop (%)	Household Size (N)*	Mean Taxable Income ($)**
Alaska, State	530,043	16.2	2.80	
Juneau	26,751	11.2	2.66	24,250
Petersburg	3,207	10.9	2.77	21,211
Angoon	638	88.6	4.09	11,563

Population data is from the 1990 census, U.S. Bureau of Census
* = Household size in mean number of persons
** = Mean taxable income per income return, 1981-1985; Alaska Department of Revenue

Fish Processing

In 1984, IPHC reported that there were 28 plants processing halibut in Area 2C communities. By 1990, this number had grown to 38 plants, reflecting the 167% increase in halibut catch to some 9,693,000 pounds. Table 3.1 shows the ports in which landings were made in southeast Alaska. With the exception of Craig, Hoonah, and Metlakatla, all the ports in which landings were made to processors had Alaska Native populations of less than 25% of their overall population. Employment in the plants in 1990 is estimated to be of the order of 3,800 persons on a seasonal basis. Sablefish, salmon, halibut, and herring, with some crab and rockfish are processed by these plants. The halibut fishery is estimated, conservatively, to provide the equivalent of 180 full-time year-round jobs in processing plants in southeast Alaska.

Sitka, Petersburg, Juneau, Hoonah, Wrangell, and Yakutat ranked first, fourth, fifth, seventh, eighth, and tenth in number of vessel landings in 1999. Juneau, Sitka, and Petersburg ranked sixth through eighth in Alaska ports for total pounds landed (CFEC 1999).

3.1.1.2 Gulf of Alaska - (Area 3A)

Area 3A extends from the western end of Kodiak Island eastwards across the Gulf of Alaska to Cape Spencer. Within this region, three sub-regions can be easily defined - Prince William Sound, including Yakutat; Cook Inlet and the Kenai Peninsula; and Kodiak Island. This region had the largest halibut catches off Alaska, and the highest number of halibut fishery permit holders (1,602 or 42% of permits) in 1990. Tables 3.4 and 3.5 detail the population and communities, and the commercial and estimated subsistence landings in the region.

As in southeast Alaska, communities fall into rural and urban types. The urban areas of the Kenai peninsula and Anchorage dominate the economy of Alaska since more than half the population of the state lives in this sub-region. Valdez, Whittier, and Seward have primarily market-oriented economies in contrast to the other communities in the other sub-regions in Area 3A. Because the Division of Subsistence, Alaska Department of Fish and Game, has focused its research on those communities defined as rural by the Alaska Boards of Fish and Game, the non-commercial harvest of fish in this area is sketchily known for the communities of the Kenai Peninsula. Mixed cash-subsistence economies are found in the rural villages of Area 3A. The Kodiak Island communities produce about 5.5 million pounds of subsistence foods for family use annually; data for Prince William Sound communities for subsistence harvests prior to 1989 suggest a similar level of family consumption of wild foods (Wolfe 1991).

Kodiak, Homer, and Seward ranked second, third, and sixth in number of vessel landings in 1999. Homer, Kodiak, Seward led Alaska ports for total pounds landed (Table 2.6).For the initial year of IFQ fishing, 2,418 Alaskans received initial QS for Area 3A. By the end of the 1998 season, the total number of QS holders had declined by 27% (CFEC 1999).

This rural/urban split can be seen in the distribution of income in communities in Area 3A. In Table 3.6, the communities with processing facilities have incomes nearly double those without. The villages with no processing facilities are also those with high Alaska Native populations although, as we have seen in southeast Alaska, this is not necessarily concomitant with rural, low-income, mixed economy communities. The lack of available capital in the rural communities, and lack of diversified employment, serves to keep investment in the fisheries by residents of these communities relatively low, and promotes the use of a mixed cash-subsistence economy as the most economically efficient. Where rural communities have both a high Alaska Native population and relatively low cash incomes, investment in vessels is lower as is the harvest of halibut. These relationships can be found in Table 3.7.

The seiners with Alaskan limited entry permits are limited to 58 feet in length overall (50 feet between rudder and stemposts), and these vessels dominate the halibut fleet (Table 3.8). In 1990, there were 1,005 boats in the 36-55 feet-long size class operating in area 3A. The average catch per boat in this size class was 11,501 pounds
of halibut in 1990. Vessels 56 feet or more in length totaled 423 in 1990, and their average halibut catch per boat was 35,073 pounds. The small boats totaled 504 boats in 1990 and averaged 1,049 pounds.

Increased fishing effort in Area 3A is attributed largely to vessels over 35 feet in length moving from Area 2C to fish halibut openings further to the west and to fish in the sablefish fishery. While investment in new vessels did occur, the restrictions on fishing days and areas caused vessel owners to move to new regions in order to find fish and meet their bills. The small boats, however, were not mobile and thus their reduced catches could not be increased by fishing in other areas.

Table 3.4 1990 Population and Distribution of Halibut Permits and Landings in Southcentral Alaskan Communities (Area 3A)--Kodiak Island, Prince William Sound and Yakutat Communities

Community	Pop. N	Native Pop %	Halibut Permits	Halibut Commerc lb	Halibut Subsist lb*
Kodiak City	6,365	14.0	404	11,573,328	325,252
Valdez	4,068	5.7	29	598,497	n/a
Other Kodiak	3,643	9.5	#	**	n/a
Kodiak Station	2,291	0.6	0	**	n/a
Cordova (Eyak)	2,110	14.9	114	1,816,665	33,971
Yakutat	534	62.1	39	918,046	22,428
Old Harbor	284	92.6	12	**	16,103
Whittier	243	8.6	8	280,882	n/a
Port Lions	222	73.5	21	**	19,003
Ouzinkie	209	94.2	20	**	7,064
Larsen Bay	147	71.4	6	**	6,806
Tatitlek	119	77.9	1	**	2,785
Chenega Bay	94	77.0	0	**	3,882
Akhiok	77	96.2	#	**	1,871
Karluk	71	100.0	#	**	3,202
Port Bailey ##				728,754	n/a
Alitak ##				689,458	n/a
Totals	20,477		654	16,605,630	
Other Area 3A Communities	306,832		948	12,965,282	
Totals	327,309		1602	29,570,912	

Population data are from the 1990 Census 1990 permit and commercial landings data are from IPHC files.
* = 1990 Subsistence landings data are estimated from Alaska Dept. of Fish and Game baseline studies for 1987; estimated landings are in pounds of dressed fish (H&G).
** = Any commercial landings were at other ports.
n/a = Data not available.
= IPHC permit data are based upon postal zip codes; many Alaskan communities share zip codes, and CFEC data indicate that halibut permit holders reported elsewhere reside here.
= These are cannery/floating processor sites.

Table 3.5 1990 Population and Distribution of Halibut Permits and Landings in Southcentral Alaskan Communities (Area 3A)--Kenai Peninsula and Anchorage Area Communities

Community	Pop. N	Native Pop %	Halibut		
			Permits	Commerc lb	Subsist lb*
Anchorage	226,338	5.1	196	42,994	n/a
Matsu area	31,027	3.7	#	**	n/a
Kenai area	13,522	3.2	#	**	n/a
Kenai City	6,327	6.1	99	1,223,591	53,147
Wasilla	4,028	4.7	23	**	n/a
Sterling	3,802	1.7	9	**	n/a
Homer	3,660	3.0	293	5,877,869	94,428
Soldotna	3,482	3.1	73	**	n/a
Palmer	2,866	3.5	9	**	n/a
Nikiski	2,743	4.0	14	**	n/a
Seward	2,699	12.9	52	5,183,281	n/a
Big Lake	1,477	0.7	2	**	n/a
Fritz Creek	1,426	1.0	0	**	n/a
Anchor Point	866	1.8	53	**	n/a
Ninilchik	456	17.0	30	195,724	5,700
Kasilof	383	0.0	47	**	n/a
Seldovia	316	24.4	29	441,823	2,496
Willow	285	1.4	4	**	n/a
Cooper Landing	243	1.7	1	**	n/a
Port Graham	166	87.6	#	**	7,736
Hope	161	2.9	0	**	n/a
English Bay	158	79.0	#	**	6,051
Tyonek	154	92.9	0	**	n/a
Moose Pass	81	6.6	0	**	n/a
Clam Gulch	79	0.0	14	**	n/a
Halibut Cove	78	0.0	#	**	n/a
Sub-totals	306,832		948	12,965,282	
Other Area 3A Communities	20,477		654	16,605,630	
Totals	327,309		1,602	29,570,912	

Population data are from the 1990 Census 1990 permit and commercial landings data are from IPHC files.
* = 1990 Subsistence landings data are estimated from Alaska Dept. of Fish and Game baseline studies for 1987; estimated landings are in pounds of dressed fish (H&G).
** = Any commercial landings were at other ports.
n/a = Data not available.
= IPHC permit data are based upon postal zip codes; many Alaskan communities share zip codes, and CFEC data indicate that halibut permit holders reported elsewhere reside here.
= These are cannery/floating processor sites.

Table 3.6 Population, Mean Household Size, and Mean Taxable Income for Selected Alaskan communities with Halibut Harvests

Community	Population (N)	Native Pop. (%)	Household Size (N)*	Mean Taxable Income ($)**
Alaska, State	530,043	16.2	2.80	
Kodiak (City)	6,356	14.0	2.92	19,953
Kenai	6,327	6.1	2.70	24,995
Homer	3,660	3.0	2.54	18,515
Cordova	2,110	14.9	2.61	20,560
Yakutat	534	62.1	2.94	19,166
Ouzinkie	209	94.2	3.07	11,204
Port Graham	166	87.6	2.77	10,682

Population data is from the 1990 census, U.S. Bureau of Census
* = Household size in mean number of persons
** = Mean taxable income per income return, 1981-1985; Alaska Department of Revenue.

Table 3.7 Numbers and size of vessels used for commercial halibut fishing and catch, by community type, defined by proportion of Native population and mean personal income.*

Community Type	Vessel Size		
	<5 tons (N) a	>5 tons (N) b	Ratio of b/a (%)
Population with less than 25% Native	1217	1199	98.5
Population with more than 25% Native	355	157	44.2
Mean personal income less than $17,000	285	167	58.6
Mean personal income more than $17,000	1284	1183	92.1
	Mean Commercial Halibut Catch by Vessel Size (lb)		
Population with less than 25% Native	1306	16788	1285.4
Population with more than 25% Native	1498	8915	595.1
Mean personal annual income per income tax return, 1981-1985			

Table 3.8	Fleet Composition by Area, Size Class, and % of Catch in the Halibut Fishery Off Alaska, 1990			
		1990		
IPHC Area	Vessel Size (ft)	N	% Fleet	% Catch
3A	<26'	327	13.9	1.0
	26-30'	177	7.5	0.9
	31-35'	371	15.8	5.7
	36-55'	1005	42.8	40.1
	56'>	423	18.0	51.5
	n/a	43	1.8	0.7

Area, vessel, and catch data provided by IPHC, 1991; all % ages are rounded.
n/a = Vessel size data not available for these vessels.

Prince William Sound Sub-Region

In the Prince William Sound sub-region, the principal fisheries are for salmon using seines, drift gillnets and set gillnets. Crab, herring and sablefish are also important commercial and subsistence species. Processors operated in four ports, Yakutat, Cordova, Valdez, and Whittier, and vessels fished for halibut throughout Area 3A in 1990. Langdon and Miller (1984) noted that smaller boats (up to 15 nrt) predominated in the local fleet fishing for halibut in 1982. Valdez, an urban community, and Cordova are the major population centers, and there are six rural villages, including Yakutat, in this sub-region. Two villages can be considered to be Alaska Native villages. Total population for the sub-region's fishing communities in 1990 was 7,003, of whom 58% lived in Valdez. Subsistence fishing was an important part of the mixed economy of the rural communities, both Alaska Native and non-Native villages.

The Prince William Sound sub-region is a meeting place for Alaska Native cultures, due to its rich and diversified marine habitat, including significant marine mammal populations. The Eyak Indians have lived in the Cordova and Copper River area for some 3,000 years. Tlingit Indians are found in Yakutat and Cordova, while Athabaskan Indians remain in the Copper River area. Members of the Chugach Eskimos are in Tatitlek and Cordova, and in many of the other communities, too. Aleuts live in all the coastal communities of the sub-region. Principal land holder is the Federal government; the Chugach National Forest covers much of the Prince William Sound and Copper River watersheds.

Employment in the area has historically revolved around commercial fishing and the mining of gold, copper and other minerals (Schroeder et al. 1987). Tourism has increased as an economic activity, with development of guided and charter boat fishing services and the cruise ship services. Yakutat has a mixed cash-subsistence economy, for example, in which the cash employment sector includes government services (7%), schools (22%), commercial fishing and fish processing (32%), tourism (22%), and transportation (10%). With the exception of government employment, all wage-sector employment is seasonal. The development of Valdez as the terminus for the Trans-Alaska Pipeline and the Richardson Highway has led to rapid development of a marine services and transportation sector in that port coupled with a diversified industrial base supporting the oil industry. Whittier is also a transportation center as it is the terminus of the Alaskan Railroad, which links it, and western Prince William Sound to Anchorage. Cordova was the site of large scale copper mining activities between 1905 and the 1930s, when the mines closed; it and the other, smaller communities depended upon the seafood industry as the basis of the cash economy since that time.

Employment of local residents in the commercial halibut fishery in the Prince William Sound sub-region was estimated to be 698 fishermen and 146 full-time equivalent (FTE) workers in processing plants in 1990. Seasonally, it was estimated that 2,805 individual workers process halibut.

Cook Inlet/Kenai Peninsula Sub-Region

Some 307,000 people resided in the communities in or abutting this sub-region in 1990. Residents held 948 halibut permits and it is estimated that the fishery employed some 3,120 fishermen and 294 FTE processing workers. The number of processing jobs has increased with the addition of 12 new plants since 1984 for a total of 34 processing halibut in 1990. The fish processing sector of the sub-region's economy employed 1,838 FTE workers; because of the seasonal nature of processing operations some 6,000 workers were involved during the course of a year.

The economy of the region is dominated by that of Anchorage and the development of the Cook Inlet and Kenai Peninsula oilfields. Founded in 1914 as a railroad construction camp, Anchorage is now the principal transportation center for central, western and Arctic Alaska, and is the state's center for banking and financial services, industry, and the wholesale and retail trades and their distribution networks. The city has grown very rapidly since the 1960s and has absorbed many local communities into its suburbs. The Kenai Peninsula/Cook Inlet communities have developed recreational and charter-boat fishing and other tourist facilities to serve Anchorage's population. Anchorage has a fleet of fishing vessels and 4 fish processing plants which handled 42,994 pounds of halibut in 1990. Persons with Anchorage addresses held 196 halibut permits in 1990.

The Kenai Peninsula has developed a diversified economy including oil production and refining, recreation and tourism, commercial fishing and fish processing, transportation and communications, and government services (Schroeder 1987). The majority of the communities are “new” non-Native towns; in 1890 only English Bay, Kasilof, Kenai, Ninilchik, Seldovia, and Seward were settlements. These towns, and Tyonek, had the only substantial proportions, that is more than 12%, of Alaska Native people in their populations. English Bay, Port Graham and Tyonek are in fact Alaska Native communities.

Homer, sometimes referred to as the “halibut capital,” was developed as a farming, ranching, and fishing community. Some 293 halibut permits were held by persons with Homer addresses in 1990. However, since Homer shares its postal zip code with English Bay, Halibut Cove and Port Graham, some permits are in fact held by residents of those communities. Ten fish processing plants handled 5,877,869 pounds of halibut in 1990. Principal employment opportunities in Homer are divided between fishing and fish processing (23%), commercial services and government (38%), and farming or homesteading (10%).

Kenai and Seward also handle major landings of halibut. Seward, the southern terminus of the Alaska railroad, has 8 fish processing plants and some 52 residents hold halibut permits. Seward receives landings from vessels fishing in the Prince William Sound sub-region in addition to those of the local fleet fishing off the Kenai Peninsula, in the lower Cook Inlet, and southwesterly towards Kodiak.

Kodiak Sub-Region

Kodiak Island has a major urban center, the city of Kodiak, and five Alaska Native villages. Kodiak City is a predominantly Euro-American community with substantial Alaska Native and Filipino minority populations. Most of the Filipino, and the newly established Latin-American community work in the 12 fish processing plants active in the port in 1990. Crab, halibut, salmon and groundfish - including sablefish and Pacific cod - are the principal commercial fisheries, with herring and shrimp as secondary fisheries. The groundfish fleet based in Kodiak has switched from an emphasis on trawling to fishing with longlines and

pot gear (for Pacific cod); this gear is similar to that used for halibut. Langdon and Miller (1984) report that the specialized, larger Kodiak halibut vessels fished throughout the Gulf of Alaska and Bering Sea grounds. Both Langdon and Miller (1984) and Tetra Tech (1981) reported that the smaller vessels fished close to Kodiak Island, and Tetra Tech reported that 80% of the small boat fleet fished exclusively for halibut on the grounds adjacent to Kodiak Island.

Kodiak Island and other nearby islands, including Afognak, Sitkalidak, and the Trinity Islands form a network of bays, fjords, and other bottom habitat which support an extremely productive fishery. The communities of the islands are accessible by sea or air, but the road system only extends from Kodiak to its immediate satellite communities. The remote villages, all with predominantly Alaska Native populations, are Ahkiok, Karluk, Larsen Bay, Old Harbor, Ouzinkie, and Port Lions. None of the villages have fish processing plants, although there are seasonal canneries at Port Bailey and Alitak. Mixed cash-subsistence economies are found in all the communities, and halibut is important both for subsistence use and commercial sale. Alaska Native employment is in fishing rather than processing; most processing workers in Kodiak are Filipinos or Latin Americans. Seasonal summer employment is also available, but the majority of these employees are recruited from other states (Impact Assessment, Inc 1991). It is estimated that there is year-round employment for some 2,800 FTE workers in fish processing on the Island (of which 336 FTE jobs are related to halibut), and some 1,523 fishermen are employed in the halibut fishery. Impact Assessment, Inc. (1991) reported that 3,200 fishermen worked in Kodiak's fisheries, of whom 672 were skippers and 2,500 crew.

Fishermen

Estimates for the number of fishermen engaged in the halibut fishery were 1,523 in the Kodiak sub-region, some 3,120 in the cook Inlet/Kenai Peninsula area, and 698 for the Prince William Sound sub-region, for an estimated total of 5,341 in Area 3A. These fishermen do not include those from other areas who fish for and/or land halibut in Area 3A, nor does it include all fishermen who fish for subsistence use.

Langdon and Miller (1984) reported that the mean age of Kodiak halibut fishermen was 37.1 years, with a median age of 34.5. The rural/urban difference in demographic patterns discussed earlier is evident in the fishermen interviewed by Langdon and Miller; fishermen from the rural villages had a mean of 10.6 years of formal education, while those resident in Kodiak had a mean of 14.2 years. Rural fishermen had a mean of 14.4 years of experience in the halibut fishery in 1982, while Kodiak City fishermen had 6.8 years of experience. Some 88% of rural fishermen in Langdon and Miller's study were Aleuts, which is comparable to the proportion of Aleuts in the villages, and the urban sample was 95% Euro-American. Rural fishermen in Langdon and Miller's Kodiak Island sample received, in 1982, 39% of their gross earnings from the halibut fishery, while urban fishermen earned 31%. Of those vessel owners in the Kodiak study, 73% were sole owners of their vessels, and the balance had partners in their fishing vessel financing.

Fish Processing

There were 66 processing plants active in the halibut fishery in Area 3A in 1990. Some 786 full-time equivalent (FTE) jobs were created in the processing sector by the halibut fishery in 1990; this is approximately 15% of the 5,153 FTE employees in the area's fish processing industry. Because of the seasonal nature of the fishery, the number of processing workers who actually worked on halibut lines is estimated to be of the order of 11,000.

Processing line workers in Kodiak have been largely of Filipino descent. Relatively few, in proportion to their numbers in the population at large, Alaska Native work in the processing plants. Much of the seasonal labor for the processing of salmon is recruited outside the region.

3.1.1.3 Alaska Peninsula (Area 3B)

Seven of the ten fishing communities of the southwestern Alaska Peninsula are involved with the Area 3B halibut fishery (Table 3.9). Some 50% of halibut permit holders for 1990 have Sand Point addresses, and Langdon and Miller (1984) noted that 45% of the fishermen for halibut resided in Sand Point in 1982 at the time of their survey. The principal centers of fishing activity are Sand Point and King Cove, with Chignik also a major player. Although on the Peninsula, Nelson Lagoon is on the north side facing Bristol Bay and has no commercial or subsistence fishery for halibut and pursues a salmon set-net fishery.

Table 3.9 1990 Population and Distribution of Halibut Permits and Landings in Southwest Alaskan Communities (Area 3B)

			Halibut		
Community	Pop. N	Alaska Native Pop. %	Permits N	Commerc. lb	Subsist. lb *
Sand Point	878	57.1	58	1,058,103	n/a
King Cove	541	79.8	38	1,598,466	n/a
Chignik Bay	188	53.4	9	918,322	9,062
Cold Bay	148	4.4	0	**	n/a
Chignik Lake	133	89.1	#	**	3,259
Perryville	108	92.8	2	**	5,130
Nelson Lagoon	83	93.2	0	**	0
False Pass	68	86.7	3	**	2,604
Chignik Lagoon	53	85.4	7	**	1,919
Ivanoff Bay	36	92.5	0	**	1,462
Totals	2,236		117	3,574,891	

Population data are from the 1990 U.S. census; 1990 permit and commercial landings data shown are from IPHC files.
* = 1990 Subsistence landings data are estimated from Alaska Dept. of Fish and Game baseline studies for 1987; estimated landings are in pounds of dressed fish (H&G).
** = Any commercial landings were at other ports.
# = IPHC permit data are based upon postal zip codes; many Alaskan communities share zip codes, and CFEC data indicate that halibut permit holders reported elsewhere reside here.

The villages active in the fishery have predominantly Alaska Native populations; however the population is a blend of Scandinavian, Scots, Aleut and Eskimo groups, and fishermen prefer to describe themselves as “locals.” Sealers and fishermen from Seattle and the Pacific Northwest settled in Sand Point and King Cove at the turn of century, married Aleut or Eskimo women, and combined commercial fishing with the customary subsistence use of local resources to develop a very resilient mixed economy.

The major fisheries in the area are salmon, crab, Pacific cod and other groundfish, shrimp and halibut. A longline fishery for both halibut and Pacific cod has developed, and the catches are delivered to processors in Chignik, Sand Point and King Cove. In 1990, King Cove ranked 8th, Sand Point 14th, and Chignik ranked 18th in the volume of landings of halibut caught off Alaska according to IPHC landings data. Some 98% of these landings were taken in the immediate vicinity of the ports; the balance was caught in halibut openings to the West, in Area 4A, or in the Bering Sea.

The Area 3B fleet included 8 small skiffs with an average catch of halibut per boat of 940 pounds in 1990. The vessels in the 36-55 feet long class had an average catch of halibut per boat of 13,326 pounds. Vessels over 55 feet in length totaled 131 vessels and averaged 42,962 pounds per vessel in 1990 (Table 3.10).

Table 3.10 Fleet Composition by Area, Size Class and % of Catch in the Halibut Fishery off Alaska, 1990

		1990		
IPHC Area	Vessel Size (ft)	N	% Fleet	% Catch
3B	<26'	5	1.3	0.1
	26-30'	3	0.8	<0.1
	31-35'	46	12.0	4.9
	36-55'	195	50.8	29.7
	56'>	131	34.1	64.7
	n/a	4	1.0	0.6

Area, vessel, and catch data provided by IPHC, 1991; all % ages are rounded.
n/a = Vessel size data not available for these vessels.

The communities in Area 3B are stable ones and growing steadily. In King Cove, for example, nearly 70% of the 1987 year-round population had lived in the community for 16 years or longer (Miller 1987). The movement of the fishing fleets through the area increases the population of King Cove by some 100 fishermen and 350 processing workers each summer. The processing workers live in company bunk houses, and are recruited from other parts of the United States. Chignik Lagoon has a similar in-migration of seasonal fishermen; in 1986, 36 houses (62% of the dwellings) in the community were owned by fishermen who lived in the community for three to six months each year. Seattle, Kodiak City and Anchorage were the most common winter addresses for these seasonal families (Morris 1987).

Although household size is high, relative to the state average, so are the relative incomes of residents of selected Area 3B communities (Table 3.11). Since there is a mixed cash-subsistence economy in Area 3B, the fishery makes a substantial contribution to both sectors. In Sand Point in 1987, 87% of employment was in commercial fishing and fish processing (Impact Assessment Inc 1991) and King Cove had a similar reliance on fishery employment. Construction trades, marine services, education and government, and trade accounted for the balance of employment in both communities.

Table 3.11 Population, Mean Household Size, and Mean Taxable Income for Selected Alaskan Communities with Halibut Harvests

Community	Population N	Alaska Native Pop. (%)	Household Size (N)*	Mean Taxable Income ($)**
Alaska, State	530,043	16.2	2.80	
Sand Point	878	57.1	2.85	29,254
King Cove	541	79.8	2.98	19,197
Chignik Bay	188	53.4	3.48	16,403

Population data is from the 1990 census, U.S. Bureau or Census
Household size in mean number of persons
Mean taxable income per income tax return, 1981-1985; Alaska Department of Revenue.

Fishermen

Langdon and Miller note that the average age of Sand Point fishermen in 1982 was 40.7 years. Fishermen resident in Sand Point had a mean of 10.5 years of education. Halibut fishing in 1982 provided 35.9% of mean personal gross income, but the median gross personal income from halibut was 10%, indicating that some fishermen fished only for halibut, while the majority fished for salmon or other species in addition to halibut. Sand Point, unlike King Cove, had a fleet of vessels considered to be "local;" IAI note that, of the fleet of 21 groundfish vessels delivering to the Sand Point plant, 17 were 58 feet-long salmon limit seiners and only one boat was from "Outside," although some of the skippers and crew were seasonal residents from Anchorage and Seattle (IAI 1991a). The resident fleet in Sand Point numbered 127 in 1986. Of these vessels the majority fished in the salmon fishery and a few were involved in the halibut and herring fisheries (W 1991a: Sand Point Profile 18). It is estimated that 280 fishermen resident in Area 3B fished for halibut in 1990. For the initial year of IFQ fishing, 772 Alaskans received initial QS for Area 3B. By the end of 1998, the total number of QS holders declined by 37% (CFEC 1999).

A seasonal migration occurs of fishermen north and west from Washington State and, on a smaller scale, from Oregon. Area 3B provided 18.5% of the total catch of Washington-based vessels, which took 23.5% of Area 3B's halibut harvest. Prior to 1970, crews on "local" vessels were largely kin-based and few non-residents were employed. In 1986, it was estimated, for Sand Point, that half of the crews on local seine vessels were non-residents outside the kinship system of hiring. Most of these fishermen came from Washington, Oregon and California, with some from the Mid-West (IAI 1991a). All "outside" boats were crewed by non-residents.

Fish Processing

In 1990 there were 4 fish processing plants in Area 3B, located in King Cove (1), Sand Point (1) and Chignik (2) (IPHC 1991). Chignik has had a commercial salmon and halibut processing plant (first in 1880, a saltery; then, a cannery, and now processor/freezer facilities) since the beginning of the halibut fishery. In 1982 it was estimated that some 600 non-resident seasonal workers worked on the processing lines of the original plant (Morris 1987), and the workforce has expanded with the building of the second plant in 1988. King Cove's processing facility was built in 1911 as a salmon packing plant, but it also handles halibut, crab, herring and groundfish in season. In 1987 the plant employed 336 seasonal workers and 5 permanent employees (Miller 1987). King Cove and Sand Point landed 1 million and 780,000 lb of IFQ halibut in 1999.

Sand Point has had a salmon processing plant since 1931, although the community had been active in the Pacific cod fishery since 1890 (Langdon 1982). Until 1986, processing workers had been principally local residents. However, the new owners of the plant, Trident Seafoods, adopted a policy of hiring non-residents on six-month contracts and lodging them in company bunkhouses. Employment at the plant ranged from 360 persons at the height of the Pacific cod fishery to between 60 and 180 workers at other times.

3.1.1.4 Aleutian and Pribilof Islands (4A, 4B, 4C and 4D)

These areas extend west of Unimak Pass (Cape Lutke) along both sides of the Aleutian Island chain, and west of a line running approximately from Unimak Pass to Cape Mohican on Nunivak Island and then to Cape Prince of Wales on the Seward Peninsula. The principal civilian communities with year-round settlements are Akutan, Unalaska/Dutch Harbor, Atka, and Nikolski on the Aleutian Islands, and St. Paul and St. George on the Pribilofs. While there was some commercial fishing for halibut by military personnel at Adak, none was reported from the base at Shemya Station in 1990 (IPHC 1991). The base was closed in 1996. Population and halibut harvest data is shown below in Table 3.12. This area is sparsely populated, with a civilian population of 4,688 in 1990. Landings from these sections of Area 4 are not negligible; Akutan ranked 9th in reported landings of halibut caught off Alaska while Unalaska ranked 12th. It should be noted that some deliveries to these two ports were made by vessels fishing in the eastern Bering Sea and Bristol Bay (Area 4E), but the amounts in 1990 were of the order of 27,000 pounds only (IPHC 1991).

Table 3.12 1990 Population, Distribution of Halibut Permits and Landings in Aleutian Islands and West Bering Sea Communities (Areas 4A, B, C, D)

			Halibut		
Community	Pop. N	Alaska Native Pop. %	Permits N	Commerc. lb	Subsist. lb *
Adak Station	4,633	0.8	3	1,970	n/a
Unalaska/Dutch Harbor	3,089	15.1	10	1,096,677	n/a
Saint Paul	763	87.7	14	145,152	n/a
Shemya Station	664	0.2	0	**	n/a
Akutan	589	39.6	10	1,417,727	n/a
Saint George	138	96.8	10	43,587	n/a
Atka	73	96.8	4	12,604	n/a
Nikolski	36	96.0	#	**	n/a
Totals (Civilian)	9,985 (4,688)		51	2,717,717	

Population data are from the 1990 U.S. Census; 1990 permit and commercial landings data are from IPHC files.
* = 1990 subsistence landings data are estimated from Alaska Dept. of Fish and Game baseline studies for 1987; estimated landings are in pounds of dressed fish (H&G)
** = Any commercial landings were at other ports
n/a = Data not available
= IPHC permit data are based on postal zip codes; many Alaskan communities share zip codes, and CFEC data indicate that halibut permit holders reported elsewhere reside here.

The four Aleutian Island communities, Unalaska, Atka, Akutan and Nikolski, have been permanent year-round communities occupied by the Aleut peoples since pre-contact days. All are located in sites with good access to marine resources such as marine mammals, salmon streams, and marine fish and shell-fish

grounds. Halibut has traditionally been a species sought and used by the Aleuts for subsistence (Schroeder et al 1987). The Aleuts of the Pribilofs are the descendants of Aleuts from Atka and Unalaska transported to the Pribilofs as seal hunters by Russian fur traders (Veltre and Veltre 1981).

Large scale commercial fishing, including halibut, has developed in the Aleutian Islands since 1970. Originally linked to the development of the king crab fishery, ports such as Unalaska and Akutan developed very rapidly. Unalaska had a population of 342 people in 1970; 1,322 people in 1980, and 3,089 people in 1990 (IAI 1991a). This growth has gone through boom and bust cycles; the crab fishery dramatically declined between 1981 and 1982, and the pollock fishery did not fully develop until 1988. There were no recorded commercial landings of halibut in the Aleutian Islands 1967 to 1973, and this fishery developed as stocks and fishing days declined in Areas 2A, 2C, and 3A, and vessels moved westward in search of fish.

Akutan is a village with 589 residents in 1990, and a large processing facility employing, in peak months from January through March, 500 or so non-resident seasonal employees. Akutan Bay has been a seasonal location for floating processors for crab and salmon since 1920, but the on-shore facility was not built until 1981 and began processing in 1982. The company which owns the plant, Trident Seafoods, also owns the plant in Sand Point and applies the same policy of preferring to employ temporary contract workers recruited outside the community. Year-round operation of these plants was feasible during the period 1985-89, but closures in the groundfish fishery have led to seasonal closures of these plants in the early 1990s (IAI 1991b).

The use of contract, non-resident labor in fish processing in the Aleutian Islands has led to dual economies being developed. While Unalaska can be said to have an urban, cash-based economy, all the other communities have a mixed cash-subsistence economy. Table 3.13 showed the disparity in taxable income between Unalaska and Akutan residents which reflects this. Saint Paul, during 1981-1985, shows a relatively high level of personal income; it must be noted that these were the last of the years of Federal employment in fur sealing.

Table 3.13 Population, Mean Household Size, and Mean Taxable Income for Selected Alaskan Communities with Halibut Harvests

Community	Population N	Alaska Native Pop. (%)	Household Size (N)*	Mean Taxable Income ($)**
Alaska, State	530,043	16.2	2.80	
Unalaska	3,089	15.1	2.57	20,055
Saint Paul	763	87.7	3.68	17,369
Akutan	589	39.6	4.50	8,241

Population data is from the 1990 census, U.S. Bureau of Census
Household size in mean number of persons
Mean taxable income per income tax return, 1981-1985; Alaska Department of Revenue.

Subsistence harvests of marine resources have been described for Atka, Unalaska, and the Pribilofs by Veltre and Veltre (1981 1982 and 1983), but Schroeder et al. (1987) noted that no systematic measurement of harvest and use levels has been undertaken and thus baseline projections of use are not possible. Schroeder et al. reported that ethnographic accounts of the communities in the region indicate that there is a high dependence on fish, shell-fish and marine mammals for subsistence purposes. They suggest that this dependence is probably higher in Atka, Akutan, Nikolski, St. George and St. Paul, where other food supplies

are more expensive and often more difficult to obtain than in other communities. Veltre and Veltre recorded subsistence use of marine mammals and fish in a survey of Pribilovian communities in 1981. At that time halibut were the principal fish consumed; on St. Paul subsistence consumption per household was 513 pounds/year, while on St. George the subsistence use per household was 270 pounds/year.

Participation in the harvesting of fish by local residents of the Aleutian communities and the Pribilofs is also restricted. IAI (1991b) reported that Unalaska has three fleets of vessels using the port. It was estimated in 1991 that 33 vessels belong to local residents and operate year round from the port; these vessels are a mix of longliners and crabbers. A second fleet, owned and operated by nonresidents of Unalaska, had 507 vessels based in Unalaska each fishing season. The third, transient fleet had 575 vessels and used the port for supplies and occasional landings. Of these fleets it is estimated that 200 vessels longlined for halibut.

Similarly, Akutan has only 12 locally owned skiffs involved in fishing for the processor; between 90 and 100 company-owned vessels and non-resident vessels under contract to the plant supply most of the fish delivered to the plant. Some 40 of these larger vessels fished for halibut (IAI 1991b).

St. Paul and St. George have a different problem; their isolation and previous dependence upon commercial fur sealing have created difficulties in establishing a commercial fishing industry on the Pribilof Islands. St. Paul has one, recently developed, on-shore plant which processes groundfish, crab and halibut. In 1990 all halibut deliveries to the plant were made by 18 locally-owned vessels. St. George had a floating processor moored in the harbor and halibut was delivered there. Local vessels are small, between 18 and 40 feet in length, and unable to fish far from the islands (Table 3.14). The IPHC created Area 4C as a fishery development area for the Pribilofs and stipulated that vessels which did not land halibut on the Pribilofs had to obtain a vessel clearance prior to the opening of Area 4C for fishing and before unloading catch (IPHC 1991 Regulation 13-2). IAI reports that in spite of these restrictions, “outside” vessels took two-thirds of the halibut quota in Area 4C in 1990 and landed their catches in Unalaska, and local fishermen made very little money and perhaps a net loss on their operations (IAI 1991b).

Table 3.14 Fleet Composition by Area, Size Class, and % of Catch in the Halibut Fishery Off Alaska, 1990

		1990		
IPHC Area	Vessel Size (ft)	N	% Fleet	% Catch
4	<26'	66	18.7	2.1
	26-30'	37	10.5	1.5
	31-35'	117	33.1	6.6
	36-55'	33	9.3	16.2
	56'>	90	25.4	73.0
	n/a	10	2.8	0.5

Area, vessel, and catch data provided by IPHC, 1991; all % ages are rounded.
n/a = Vessel size data not available for these vessels.

Fishermen

There is no information available in the literature on participants in the commercial halibut fishery in areas 4A, 4B, 4C, and 4D. The fishermen operating 26 local vessels in the Pribilofs are Aleuts from the Islands, as described above, who primarily fish for halibut, and there are local fishermen fishing from skiffs in Akutan and Unalaska (IAI 1991a). IAI reported that the out-of-state fishermen and processing workers who comprise the commercial fishing work-force are largely from the Pacific Northwest states and California, and state that, "as a group, locals, and Aleuts in particular, are very under-represented in the harvesting of marine resources" (IAI 1991a: Unalaska-19). The number of halibut fishing permits held by Unalaska residents totaled only 10 in 1990. Income earned from 13 permits fished in 1987 was $361,827 and 77 fishermen were employed on local halibut vessels fishing from Unalaska (IAI 1991a). Alaskan QS holders declined from 372 to 333 in the first year of IFQ fishing in 1995 (CFEC 1996). Total QS holders declined for Areas 4A - D by 32, 18, 10, and 18%, respectively, by 1998 (CFEC1999)..

Fish processing

Information on fish processing is described in the previous sections. Again there is no information in the literature on fish processing employment related to the halibut fishery. The plants on Saint Paul Island and in Akutan used seasonal workers from communities outside the region in 1990 (IAI 1991b), and the majority of workers in Unalaska and on the floating processors are also from outside the region. Year-round processing of seafood in Unalaska has promoted some stability in employment, and it appears that some of the seasonal employees have settled in the community, hence the population increase. Dutch Harbor/Unalaska ranked ninth in number of landings and fourth in halibut IFQ pounds landed in 1999. St. Paul had landings of 280,000 lb in 1999.

3.1.1.5 Bristol Bay-Eastern Bering Sea (Area 4E)

The principal communities involved in the halibut fishery are in the Nelson Island/Nunivak Island area. The broad shelf of the Bristol Bay seabed drops off into deeper water, and halibut grounds are found close to shore in this area. Alaska Natives in this area are predominantly Yup'ik Eskimos, and with the exception of Bethel, Dillingham, and Nome, 20 rural villages engaged in the halibut fishery for commercial or subsistence use have populations less than 700 people in 1990. Population data and the distribution of halibut permits are shown in Table 3.15.

Schroeder et al. reported that the communities of the region have been found to have mixed cash-subsistence economies (1987). In approximate order of importance, cash-economy employment available to residents of the region include government, education and service sector jobs; commercial fishing for salmon in Bristol Bay, the Yukon and Kuskokwim Rivers; commercial fishing for herring and halibut in the Nelson Island and Nunivak area; and employment in sales and services. Schroeder et al. reported that limited employment was generated by a private business sector, which was virtually non-existent in most villages (1987).

Subsistence activities continued in all the communities of the region, with the exception of King Salmon which is a government "town" servicing the air strip, since these are the most economic activities which yield the most consistent return to families. Schroeder et al. noted that local residents continued to rely on local fish and wildlife resources for most of the protein and fats they consume. In the Nelson Island area, for example, the community of Tununak harvests halibut from June through August for subsistence use. Some 93% of the households in Tununak engage in this harvesting activity, and all households reported consuming halibut in 1987 (Table 3.16). The amount of halibut consumed was 93.4 pounds per capita in 1987.

In 1990, the IPHC established a special commercial halibut fishery development zone in Area 4E, with similar rules to those established for Area 4C off the Pribilofs (see above). This change encouraged a number of local fishermen to fish in the halibut fishery using Bristol Bay limit seiners (i.e., under 32 feet in length). Vessels landed halibut at buying stations/processing plants at Mekoryak, on Nunivak Island, and at Tununak, Nelson Island. Other catches were landed in various ports around Bristol Bay and transhipped to processors. Four vessels from "Outside" took another 24,000 pounds and landed their catches in Unalaska (see Table 3.17).

Table 3.15 1990 Population, Distribution of Halibut Permits and Landings in East Bering Sea Communities (Area 4E)

			Halibut		
Community	Pop. N	Alaska Native Pop. %	Permits N	Commerc. lb	Subsist. lb *
Bethel	4,674	67.6	#	**	n/a
Nome	3,500	58.5	1	**	n/a
Dillingham	2,017	57.0	20	**	0
King Salmon	696	5.9	2	**	n/a
Emmonak	642	91.29	0	**	n/a
Togiak	613	4.3	17	**	n/a
Naknek	575	50.6	13	**	n/a
Pilot Station	463	94.2	#	**	n/a
Toksook Bay	420	93.7	8	**	n/a
New Stuyahok	391	94.0	3	**	n/a
Manokotak	385	92.9	5	**	n/a
Chefornak	320	96.1	#	**	n/a
Tununak	316	95.0	#	3,413	29,514
Newtok	207	94.7	1	**	n/a
Aleknagik	185	89.6	2	**	n/a
Mekoryak	177	95.6	17	7,730	n/a
Nightmute	153	97.5	#	**	n/a
South Naknek	136	85.5	7	**	n/a
Egegik	122	76.0	1	**	268
Port Heiden	119	64.1	1	**	167
Sheldon Point	109	95.1	1	**	n/a
Levelock	88	100.0	0	**	396
Pilot Point	53	86.4	#	**	186
Ugashik	7	100.0	1	**	0
Bristol Bay (General)				25,401	n/a
Totals	16,369		100	36,544	

Population data are from the 1990 U.S. Census; 1990 permit and commercial landings data are from IPHC files.
* = 1990 subsistence landings data are estimated from Alaska Dept. of Fish and Game baseline studies for 1987; estimated landings are in pounds of dressed fish (H&G)
** = Any commercial landings were at other ports
n/a = Data not available
= IPHC permit data are based on postal zip codes; many Alaskan communities share zip codes, and CFEC data indicate that halibut permit holders reported elsewhere reside here.

Table 3.16	Population, Mean Household Size, and Mean Taxable Income for Selected Alaskan Communities with Halibut Harvests in 1990.			
Community	Population N	Alaska Native Pop. (%)	Household Size (N)*	Mean Taxable Income ($)**
Alaska, State	530,043	16.2	2.80	
Tooksook Bay	420	93.7	4.77	10,034
Tununak	316	95.0	4.05	8,223
Nightmute	153	97.5	5.28	8,112

Population data is from the 1990 census, U.S. Bureau of Census
Household size in mean number of persons
Mean taxable income per income tax return, 1981-1985; Alaska Department of Revenue.

Table 3.17	Fleet Composition by Area, Size Class, and % of Catch in the Halibut Fishery Off Alaska, 1990 (Areas 4A, 4B, 4C, 4D, and 4E)			
		1990		
IPHC Area	Vessel Size (ft)	N	% Fleet	% Catch
4	<26'	66	18.7	2.1
	26-30'	37	10.5	1.5
	31-35'	117	33.1	6.6
	36-55'	33	9.3	16.2
	56'>	90	25.4	73.0
	n/a	10	2.8	0.5

Area, vessel, and catch data provided by IPHC, 1991; all % ages are rounded.
n/a = Vessel size data not available for these vessels.

Fishermen

There are no data available in the literature surveyed on the commercial fishermen participating in the eastern Bering Sea fishery for halibut. Forty-eight Alaskans were initially awarded QS for Area 4E in 1995. No consolidation has occurred here since this area is 100% CDQ and no IFQs are awarded to those QS.

Fish processing

Halibut buying stations and/or processing plants are reported by the IPHC for Mekoryak and Tununak. There is no information about these operations in the literature surveyed.

3.1.2 Historical Fishing Practices and Dependence on the Fishery

The fisheries for halibut off Alaska have been prosecuted since prehistoric times by Alaska Natives. In historic times and to the present the halibut fisheries have continued to provide food for local people and fish for trade and commerce. The development of the commercial fishery in the late 1800s by schooner and dory fishermen from Washington, Oregon and California has resulted in long standing ties to the present

fishery by fishermen from those states. The linkages have changed over time; halibut schooner and, later, steamer fishermen settled in communities such as Ketchikan, Petersburg, Kodiak, Sand Point, and King Cove. From these communities they developed local halibut fisheries and fisheries for other species as part of an annual round of commercial fishing.

Processing plants were built in many communities, and the large schooners and steamers delivering fresh halibut on ice to the States of Washington and Oregon in the first quarter of this century have been replaced by the container shipment of frozen product to reprocessing plants in those states or abroad. Changes in the management of fisheries, to the derby fishery for example, hastened the demise of historic patterns of involvement in the commercial halibut fishery. It is now largely an Alaskan-based fishery, with some 88% of permit holders having postal addresses in the state in 1990. Involvement in the fishery by fishermen from Washington and Oregon is usually with vessels which travel to Alaska, and then are based in a port for the duration of the fishing year. These vessels typically land at local plants and to all intents and purposes are indistinguishable from their Alaskan counterparts.

Historically, economic dependence on the fishery for a year-round livelihood by individual fishermen lasted from 1900 to 1950. Fishing companies relinquished their company vessels and concentrated on the businesses of processing and marketing fish in the period after the First World War, permitting independent fishing ventures to increase and prosper for a while. Overfishing of the resource, stagnant or declining over-the-dock prices, and increasing operating costs were offset by investment in new technologies, different approaches to management, and finally diversification into other fisheries. Bell reports that the average fishing season, measured from first port clearance to last landing, for a Seattle-based vessel participating in the halibut fishery was 272 days in 1930, 224 days in 1931, 99 days in 1954, and 173 days in 1965 (Bell 1981). Over the same period productivity per fisherman increased by a factor of 2.34, and crew size shrank by a third from an average of 9.3 men per vessel to 6 men.

The number of days actually spent fishing for halibut has decreased over time; in some years voluntary industry schemes had vessels laying-up for periods of time. In other years maximum poundage per fisherman was set as the cut-off point. By 1977, the IPHC had established a season of four "openings" totaling 73 fishing days for Southeast Alaska during the fishing year. In the same year, Area 3A had three openings totaling 47 days; 3B was open for a total of 65 days on four occasions; and Area 4A was open for 227 days consecutively (TetraTech 1981). In 1991, the halibut fishery in Areas 2C, 3A, and 3B is scheduled for three 24-hour openings; in Area 4A, there will be four 24-hour openings (IPHC 1991). To reduce fishing pressure further, the openings coincide so that vessels cannot move from one area to another. The Alaskan halibut fishery has been under an Individual Fishing Program and an eight month fishing season (March 15-November 15) since 1995.

Thus, the historical dependence on the fishery for a livelihood by some fishermen has been replaced by dependence on the fishery as part of a seasonal round of other fishing activities. Or, in the case of some part-time fishermen, by periods of employment ashore between fishing seasons.

3.1.2.1 Historic Participation of Southeast Alaska Fishermen

The Alaska Natives of the Alexander Archipelago have fished for halibut from "time immemorial" (General J. Davis, 1870, cited in Price 1990). The Tlingit, Haida, and Tsimshian Indian tribes had developed specialized fishing gear for taking halibut by the time of first contact and used the fish for subsistence and for customary trade with other, inland, groups. Halibut were, and are, not as important as salmon to the existence of Alaska Natives. They are part of the myth/belief/folklore systems of each of the tribes and considerable cultural value is ascribed to the fish and fishery. Halibut contributed a significant portion of the mixed economy of cash-subsistence activities after the development of the commercial fishery, and

continues to do so to present times. Alaska Natives worked in the salteries and processing plants of the early fishery and caught fish for the plants and tenders, too. This participation has continued, and the fisheries from ports such as Angoon, Hoonah,

Hydaburg, Kake, and Metlakatla are prosecuted in the main by Alaska Natives fishing traditional grounds.

Southeastern Alaska fisheries were developed by fishermen, many of Scandinavian origin, and companies in the salmon fishery. Canneries were located at a number of communities by the mid-1880s, and the first recorded halibut processing was done at the newly-built salmon cannery in Klawock in 1878 (Bell 1981). The development of the commercial fishery for halibut was attempted in 1888 with Gloucester-style schooners fishing dories, but the narrow island passages and difficult weather delayed any major fishery until the mid-1890s when auxiliary powered vessels based in Puget Sound began fishing the relatively-sheltered inside waters during the fall and winter. Their catches were iced down and shipped to Seattle and Vancouver by tender (Bell 1981).

Ketchikan prospered from this fishery as it was the U.S. Customs point of entry and departure. A salmon cannery was built in the port in 1887, and a cold storage plant for halibut was completed in 1910. Fishermen and process workers for these ventures were drawn, in part, from the neighboring Alaska Native communities of Craig, Hydaburg, and Metlakatla. As the halibut fishery in the central Gulf of Alaska, that is west of Cape Spencer, developed after 1913, Ketchikan became a principal supply port for the Puget Sound vessels fishing in the new fishery. The importance of the commercial halibut fishery to Ketchikan continues to this day and in 1990, the port handled some 1,036,245 pounds of commercially caught halibut.

Petersburg was created as a “green field” site port in 1897. The early Norwegian settlers chose as the site for their fishing port a spot which lay close to the boundaries of the traditional fishing areas of the Tlingit villages of Kake and Wrangell, and thus provided access to fishing grounds with a minimum of disturbance of traditional property rights. Construction of a wharf and salmon cannery in 1899, permitted development of a year-round halibut fishery. Particularly important was the fall and winter fishery, in which Puget Sound vessels participated. Bell notes that, in 1906, there were 23 Puget Sound vessels fishing for halibut from Petersburg and 18 local vessels (1981). As the grounds west of Cape Spencer developed in the 1920s, the Puget Sound vessels shifted westwards and Petersburg developed its own fleet of medium-sized vessels fishing for halibut and salmon. Local fishermen operated a marketing cooperative and later purchased the processing plant to ensure stable markets for locally caught fish. In 1990, Petersburg ranked fifth in halibut landings with 2,283,525 pounds or 4.3% of all landings. As the halibut season has shortened due to fishing pressure and stock decline, full-time employment in longlining for halibut has ceased to be possible. In consequence the Petersburg fleet has diversified, and vessels now round out their fishing year with salmon and herring seining, longlining for sablefish, or pot fishing (Langdon and Miller 1984). The number of commercial halibut permits fished has remained fairly constant between 1980 and 1990 at approximately 210, and the halibut fishery continues to be of importance to the community.

The other communities in Southeast Alaska have also seen their fisheries for halibut change in ways similar to those in Petersburg and Ketchikan. The predominantly Alaska Native communities, such as Angoon and Hoonah, have seen their commercial halibut catches decrease but since they were already fully exploiting a diversified “portfolio” of fisheries in the vicinity of their villages, the impact was somewhat sharper as there was a real loss of economic opportunity and of subsistence food. In addition, processing ventures in Kake and Angoon failed. Sitka and Pelican, communities with processors and links with the Area 3A halibut fisheries, have continued to lead in halibut production but their larger Gulf of Alaska vessels have had to develop new longline fisheries, and there has been major growth in fisheries such as that for sablefish.

3.1.2.2 Historic Participation in the Fisheries in Area 3A

As noted elsewhere, the larger Puget Sound vessels began developing the fishery for halibut west of Cape Spencer in 1913. Commercial fishing for halibut moved steadily westwards as stocks were depleted. Since the spawning grounds for halibut are in the Bering Sea, the move westward further increased the possibility of overfishing as more juvenile fish were encountered in the fishery (Bell 1981).

The rural communities of Area 3, as in Southeast Alaska, had relied upon halibut as an element in their mixed cash-subsistence economy from the beginning of the fishery. Changes in the commercial halibut fishery have impacted these communities in terms of reduced economic opportunity and reduced subsistence harvests. Port Graham and English Bay, for example, have been shown by Schroeder et al. (1987) to be part of a system of resource use that is important economically, socially and culturally. The mixed cash-subsistence economy in Port Graham was severely impacted by closure of the local processing plant from 1960 to 1968, and again after 1984 when the plant closed.

The rural communities of Kodiak Borough have high percentages of Alaska Natives as population and continue a mixed cash-subsistence economy. Langdon and Miller note that the skiff fishery (vessels of less than 5 net tonnes) was largely prosecuted by Alaska Natives, and that in 1984 the fishermen of Ouzinkie relied almost entirely upon the halibut fishery for the cash segment of their economy (1984). Schroeder et al. report similar findings for the importance of the commercial fishery and fish processing to the inhabitants of these rural Kodiak communities (1987).

Non-Native communities such as Homer, which was founded in 1895 as a coal port, did not enter the halibut fisheries until the 1920s (Schroeder et al. 1987), and the fishery -- although of importance -- is part of a diversified fishing economy and the local dependence upon the halibut fishery is lessened. Homer is, however, the second port in volume of halibut landings in the Northwest Pacific. Some 11% of all landings (5,877,869 pounds of halibut) were made in Homer in 1990.

Similarly, Seward was developed as a railroad port and terminus in 1903, and a cold storage plant was built there in 1917 to service the Gulf of Alaska halibut fishery (Bell 1981). Bell reports that after 1931, and the first major downturn in the fishery, few halibut were landed in Seward until the 1960s. In 1990, some 9% of all halibut landings were made in Seward. In part this was because of its role as a transportation center, but also because it was a convenient landing point for the halibut harvested in the openings in Area 3A. In all, 5,183,281 pounds of halibut were landed in Seward from 72-hours of fishing activity in 1990.

Kodiak City was the leading port for halibut landings in 1990, with 22% of all landings, but played a minor role in the fishery prior to 1960. Bell notes that the development of the productive halibut grounds west of, and contiguous to, Kodiak in the 1930s was at a time when vessels returned to their home-ports to land catches and "fulfill their self-imposed between-trip lay-ins" (Bell 1981). After the Second World War, there was ample cold storage in other ports, including Sand Point, to handle halibut catches and thus no reason to select Kodiak as a landing point. However, with the growth of the crab and shrimp fisheries in the 1960s additional cold storage and other facilities were built in Kodiak which were attractive to the halibut vessels. Smaller catches in the 1970s made intermediate off-loading ports, such as Kodiak and Seward even more attractive and the switch to short openings in 1977 confirmed the economic attractiveness of the port to vessels in the fishery.

Thus the present day dependence of the Kodiak City fleet on the halibut fishery as part of the seasonal round is because of the development of the fleet for other fisheries and the imposition of fishing season management on the halibut fishery. The dependence is no less real for all that. Langdon and Miller reported that two-thirds of the halibut fishermen resident in Kodiak in 1982 were born in states other than Alaska, and had resided in Kodiak City between 6 and 10 years on average (1994). Langdon and Miller note that, in 1982, there was a small fleet of Aleut-owned vessels, some 10 to 15% of the total fleet at the time, fishing

from Kodiak City. These vessels participated in a mixed cash-subsistence economy typical of the six Alaska Native communities in the Kodiak Borough (1984).

3.1.2.3 Historic Participation in the Fisheries of Area 3B

Some 45% of all halibut fishermen resident in Area 3B were estimated by Langdon and Miller to live in Sand Point (1984). The communities of Chignik Lake, Chignik Lagoon, Chignik, Perryville, and King Cove are homes to the balance of the resident fishermen. Halibut processing began in Sand Point in 1946 when a former military cold store was sold as surplus (Bell 1981). When Langdon and Miller interviewed fishermen in 1983, it was found that the mean length of participation in the commercial halibut fishery by Sand Point residents was 9.1 years, with a median of 7.5 years (1984). Such a short participation span can be indicative of a recently developed fishery. In recent years the halibut landings at Sand Point, although 1,058,103 pounds in 1990, have been small relative to the groundfish landings (IAI 1991). The structure of the fleet has also changed since the Langdon and Miller study in 1983, and the dependence on halibut as a commercial fishery is part of a seasonal round, which includes salmon and crab fishing, by a segment of the fishing industry based at Sand Point.

Halibut is traditionally part of the mixed cash-subsistence economy of the Aleut population of Area 3B. Subsistence harvests range between 36 and 48 pounds per capita for the communities studied (ADF&G 1988), and some 85% of the population uses subsistence halibut.

3.1.2.4 Historic Participation in the Fisheries of Area 4A, B, C, D

The Aleut population of the Aleutian Islands and the Pribilof Islands has traditionally harvested halibut for subsistence use (Schroeder 1987; Veltre and Veltre 1981 and 1983; Orbach and Holmes 1983). The local communities of Atka, Nikolski, Akutan, Saint George and Saint Paul harvest halibut as part of a seasonal round of commercial and subsistence fisheries. The commercial fishery, with halibut landed in the Aleutian Islands, is a development of the past twenty years as the halibut longliners sought new grounds. Between 1967 and 1973 there were no recorded commercial halibut landings in the Aleutian communities.

Akutan and Unalaska rank 9th and 12th respectively in commercial landings of Pacific halibut in 1990. However, the majority of vessels landing at the processing plants are non-resident. IAI report that the halibut harvesting sector in Unalaska employed 77 people locally in 1987, a gain of 30 people since 1981, and this is appropriate given the 11 commercial halibut permits held by local residents in 1986 (IAI 1991). Of these permits, IAI report that 3 were for longline vessels less than 5 net tonnes, and 8 permits were for vessels over 5 net tonnes.

In the processing sector, groundfish processing dominates but all Unalaska plants process halibut when available although IAI report that one plant discontinued halibut processing at the end of the halibut season in 1990. Fish delivered to the plants comes from throughout Area 4 (including 4E), even though vessel clearance requirements militated against catches from the area of the Pribilofs and Area 4E. Local residents fish for halibut as part of a mixed cash-subsistence economy, and as such are more dependent on the fishery.

The Aleuts of the Pribilof Islands have used the halibut resources of the Islands for subsistence since they were moved there by Russian fur traders (Veltre and Veltre 1981). With the termination of the fur seal harvest, the Pribilovians have turned to commercial fishing as their primary economic activity, with halibut as their principal resource. To this end, the IPHC declared Area 4C as a fishery development area for the Pribilofs with a view to assisting islanders in becoming economically self-sufficient. In 1990, however, 44.6% of the halibut catches taken in Area 4C were landed by vessels owned by Washington State permit holders.

3.1.2.5 Historic Participation in the Halibut Fishery of Area 4E

The Yup'ik peoples of Area 4E have traditionally used halibut for subsistence purposes. In particular, Nelson Island communities, such as Tununak, have relied on the resource. Communities further south, along the shores of Bristol Bay, have used halibut when available, but the principal subsistence fishery has been for salmon.

As the Yup'ik villages have developed cash economies, they have turned to harvesting marine resources. To this end they have begun to participate in the halibut fishery. Area 4E was designated in 1990 as a fishery development area by the IPHC, and there was a increase in the number of local fishermen and permit holders participating in the fishery. However, 36% of the halibut harvested in Area 4E in 1990 was taken by vessels owned by Washington State permit holders.

3.1.3. Alaska Native Fisheries

The 1990 census reported that of the 550,043 people living in Alaska, 21 % (116,653) were rural residents (Wolfe and Bosworth 1994). Of these, 48% were Alaska Natives (55,888) and 52% were non-Native (60,765). Of the remaining 433,390 urban residents, 16% were Natives (29,810) and 84% were non-Natives (403,580).

In this section, the participation of Alaska Natives in the fisheries in each area will be considered. General Jefferson Davis, in his report to the U.S. Congress in 1870 on his administration of Alaska, wrote: “Fish form the chief and most easily procured food of the natives, and has from time immemorial” (cited in Price 1990). Fishing has historically been an important component of the lives of Alaska Natives, and the exploitation of halibut for subsistence and trading purposes is well documented. Each major Alaska Native group active in the halibut fishery will be reviewed in turn, beginning with those fishing in Area 2C and moving northwest.

In previous sections in this chapter it has been noted that the Alaska Native populations are largely found in the rural communities, and blend subsistence activities with fishing in the market economy. Traditionally, coastal Alaska Natives fished in waters near to their settlements and established a pattern of fishing rights and obligations recognized by other Alaska Native groups. In a report prepared for Congress by Lieutenant G.T. Emmons in 1905 at the request of President Roosevelt, it is noted that “the whole country was portioned off among the [Alaska Native] families as hunting reserves, berry grounds, or fishing sites, and their laws of property and rights were very clearly defined and strictly observed” (cited in Price 1990). These “territorial user rights in fisheries” (TURFS, as described by Pollnac 1983) correspond to the areas and resources needed for subsistence by the group or clan. Mapping of traditional fishing grounds, as presently observed by Alaska Natives, by the Alaska Department of Fish and Game show these areas to have minimum overlap between communities and an agreed upon scope embodied in folk lore and the cultures of the communities.

Similarly, fishing patterns and gears were, and are, developed to fit the particular needs of the local fishery. In all these activities related to fishing for subsistence and trade, the Alaska Native communities seek social and economic efficiency; that is, the maximum return to the community for the minimum investment of labor and capital. Thus a pattern of seasonal fishing and hunting is tailored to local needs; when a sufficiency of one good, say firewood or seal oil, has been collected, effort will be directed to the harvesting of other needed subsistence items. Thus the use of commercial fishing gears for subsistence harvesting is commonplace.

In this survey it has been found that there is a confusion in the reporting of subsistence harvests in general, and by Alaska Natives in particular, since IPHC lumps subsistence harvesting with recreational fishing as activities using non-commercial gears and with a bag-limit of two fish per day (G. Williams, IPHC; pers. commun. to P. Fricke). Information provided by Alaska Department of Fish and Game's Subsistence Division for rural communities show that, regardless of the IPHC definition, subsistence fishing for halibut is conducted in traditional patterns of seasonality and intensity that are socially and economically efficient for the harvesters. The scale of harvesting is in excess of the recreational harvest's bag-limits, but is self-limiting in that the harvest is tailored to the need of the individual, family, or extended family unit as culturally defined.

3.1.3.1 Traditional and Customary Fishing Practices of Alaska Native Peoples

The following is adapted from Wolfe (1993). More than 55,000 Alaska Natives live in about 250 rural settlements, including Tlingit, Haida, Tsimshian, Aleut, Alutiiq, Yup'ik, Inupiat, and several Athabaskan tribal groups (Figure 3.1). The economies, cultures, and spiritual well-being of Alaska's indigenous societies are heavily dependent upon customary and traditional fishing and hunting practices (Wolfe and Walker 1987). Subsistence activities of Alaska Natives are usually conducted by traditional, kinship-based groups using small-scale efficient harvesting technologies. The food is preserved by traditional, labor-intensive methods including air-drying, smoking, freezing, salting, and fermenting. Traditional foods are distributed along non-commercial networks of sharing and exchange and consumed primarily by families in rural areas. Fishing occurs in traditional areas following customary principles of the local society. During the past century, traditional subsistence practices have been substantially eroded by competing commercial and sport fishing by non-Natives and other factors. These interests have exerted considerable political influence on Federal and state governments that manage fish and game. These influences have resulted in many fishing and hunting regulations that substantially restrict traditional fishing and hunting by Alaska Native groups.

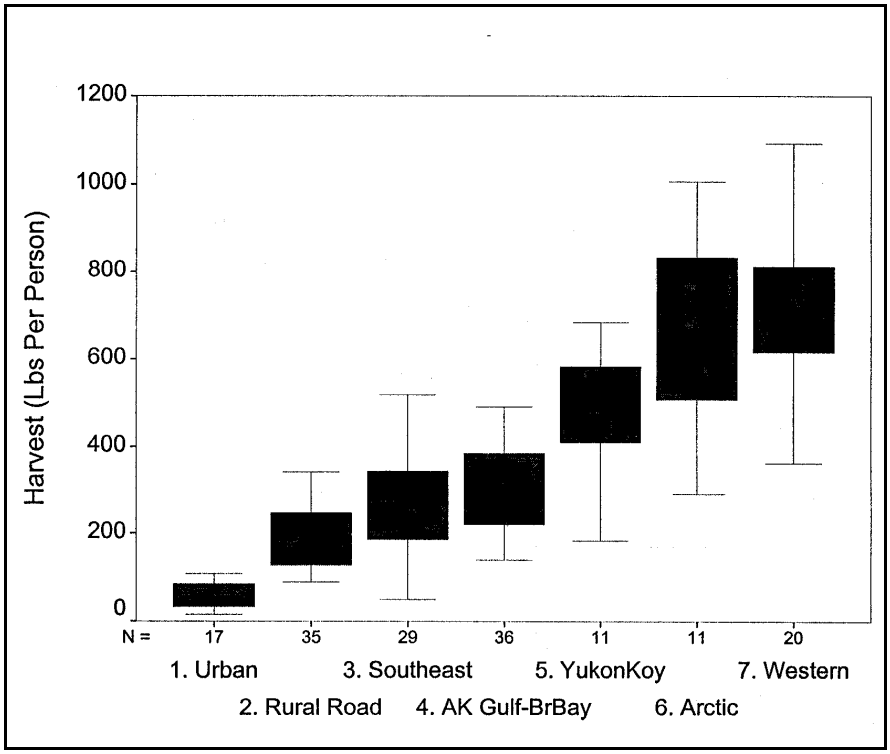


Figure 3.1. Wild food harvests in Alaska communities.

The following section is adapted from Smith and Kancewick (1995) Alaska Native subsistence occurs not only to obtain food, but is also part of a cultural/socioeconomic system that has six basic characteristics: a community-wide seasonal round of subsistence activities; high participation rates in fishing and hunting activities; substantial outputs of fish and game products for local use; a domestic mode of production;

extensive non-commercial distribution and exchange networks; traditional systems of land use and occupancy; and a mixed economy combining subsistence and commercial sectors (Wolfe 1984).

A crucial cultural aspect also occurs for Alaska Native subsistence uses: the territorial nature of subsistence; the reliance on taking fish and game when available and needed; the importance of the manner of take; and the way in which subsistence activities are a group effort. The location of subsistence harvests is not a matter of preference, but a key element of the 'customary and traditional uses' of fish and game. The place one takes fish and game helps define the group to which one belongs, and hence the particular rules that one may follow. Subsistence is, by its very nature, a local activity.

The systems of land use represent a sociopolitical organization of fishing and hunting whereby access to resources is defined and control exerted (Wolfe 1984). The locations of fishing and hunting activities by residents of a community are influenced by systems of non-codified customary laws defining rights of access. Trap lines, fish camps, set net sites, big game areas, and other areas are recognized as the use areas of particular kinship groups and communities. ADF&G studies indicate that subsistence users tend to harvest in traditional use areas surrounding their communities, therefore, most subsistence harvests tend to be relatively accessible from the community (Wolfe and Bosworth 1990). Subsistence harvest areas for particular groups of people are definable and relatively predictable. Subsistence users generally do not harvest outside their community's traditional use area.

A second defining characteristic of subsistence uses is that resource harvesting is seasonal in nature; resources are taken when they are available and needed. The seasonal round o f subsistence is a built-in aspect of the entire custom and tradition of subsistence harvesting. A third component is the interplay of spiritual beliefs and subsistence fishing. These beliefs define those between harvester and prey and those within the community itself. The continuity of these hunting patterns throughout the generations is a reflection of the strength of these cultural ties. A fourth component relates to subsistence as a group activity. Subsistence is in part an economic system whereby subsistence harvesting and processing are engaged in by small groups within a village, usually families, (Wolfe et al. 1984).

Figure 3.2 (from Wolfe and Bosworth 1994) demonstrates that a substantial portion of rural households harvest and use wild foods. For surveyed rural communities, 75-98% harvested fish and 92-100% of households used fish; 48-70% harvested wildlife and 75-98% used wildlife. These patterns indicate that many households shared harvested fish with non-harvesting community members. The composition of wild food harvests by rural residents is 90% fish, 20% land mammals, 14% marine mammals, 2% shellfish, 2% birds, and 2% plants.

Subsistence food harvests provide a major part of the nutritional requirements of Alaska's rural population (Wolfe and Bosworth 1994). The annual rural harvest of 375 lb of wild food per person contains 243% of the protein requirements of the rural population (i.e., about 107 g of protein per person per day compared to a mean daily requirement of 44 g). Subsistence harvests, however, contains only about 35% of the necessary caloric requirements (i.e., it contains about 840 Kcal daily of the 2,400 Kcal daily requirement).

3.1.3.2 Alaska Natives of Area 2C

In Area 2C, three tribal groups have been involved in the subsistence and commercial halibut fisheries from the time of the Seward Purchase. These groups are the Haida, Tlingit, and Tsimshian tribes. The Tlingit and Haida inhabited the Alexander Archipelago prior to contact with non-Natives, and the archaeological record suggests that habitation goes back at least 9,000 years before present. The Tsimshian are a tribe that, like the Haida, is also found in British Columbia, and the principal settlement of Tsimshian in Area 2C, at Metlakatla, was founded in the 1870.

Communities in Area 2C with more than 20 per cent Alaska Native population include Sitka, Metlakatla, Craig, Hoonah, Klawock, Kake, Angoon, Hydaburg, Saxman, Klukwan, and Kasaan.

3.1.3.2.1 The Haida

The Haida have lived, and utilized marine resources, in southeast Alaska since before historic contact (Stewart 1977). Halibut, in combination with other marine fish, made up the backbone of the economies of the southeast communities at the time of contact. The fish catches of the southeast region were so large and dependable that they functioned as the basis for the development of one of the most complex cultures on the northwest coast. The Haida culture is multi-faceted, including but not limited to large populations, a stratified society, and elaborate systems of art and ceremony, which find expression through complex networks of sharing and exchange (Spencer and Jennings 1965; Alaska Department of Fish and Game 1991).

Fish, and halibut in particular, have long been important for the Haida. Like other Alaska Native tribes and communities, the fish that are caught in the subsistence fishery are shared among their large extended-family groups, defined by ancestry to ancient clans and lineages (Alaska Department of Fish and Game 1991).

Halibut is still a highly valued resource in the region today. Continuing in the traditions of their forefathers, many Haida still catch halibut with baited hooks on weighted lines that are set with floats or held by hand. The younger generation of harvesters continue to learn the techniques for harvesting and processing halibut and other bottomfish by watching their elders and joining them in subsistence fishing activities (Alaska Department of Fish and Game 1991). And many still prefer the traditional methods of drying and smoking the halibut as was done in the past. As discussed by an Alaska Department of Fish and Game report (1991), halibut that is smoked and dried is still a highly valued food by southeast residents.

While commercial fishing for salmon and halibut have been a principal source of income to the Haida, non-Native practices in the development of commercial fisheries in the region have been costly to them. For example, fish stocks have been greatly depleted. And, along with non-local control of profit from fishing enterprises, have been restrictions on Haida subsistence practices. Nevertheless, subsistence activities have persevered in these mixed, subsistence-market communities, although at a lower level than in other Alaska Native Alaskan groups (Betts and Wolfe 1991). And as the Haida have been, they continue to be dependent on

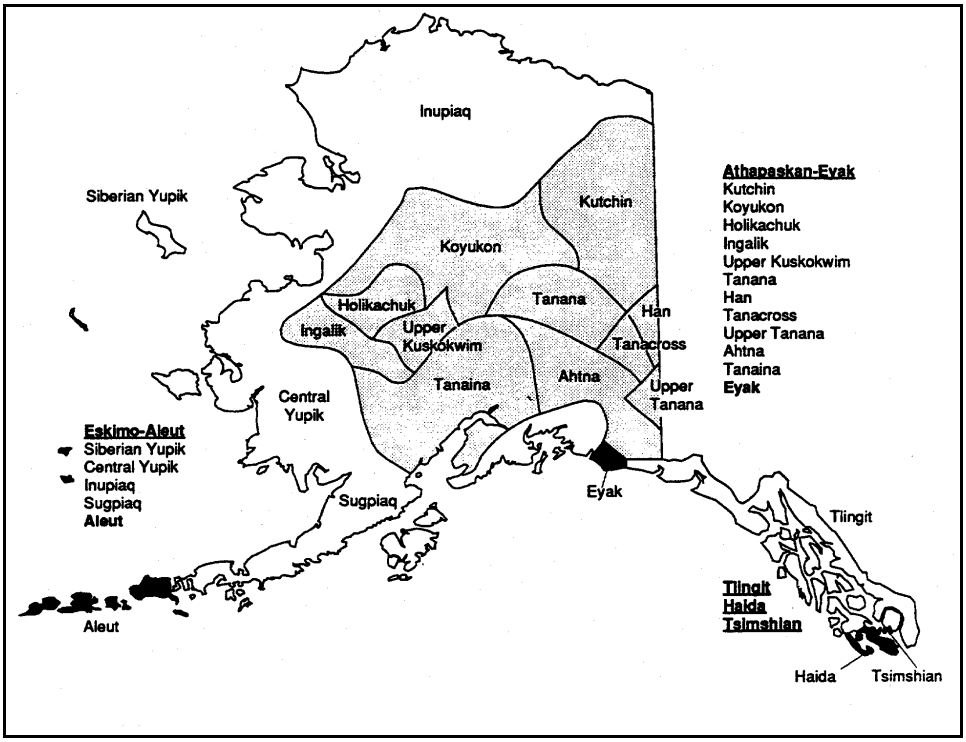


Figure 3.2 Distribution of Alaska Native tribal groups, based on language groups (from Alaska Historical Society 1982).

halibut and other marine fish not only as a source of nutrition and potential capital but also for the significant cultural and psychological benefits they attain from subsistence activities.

Haida participation in the commercial halibut fishery is not documented, but some 100 commercial licenses are estimated to be fished by Haida resident in rural communities.

3.1.3.2.2 The Tlingit

Tlingit Indians have lived in the southwest archipelago area and utilized the marine environment there for nearly 3,000 years (Langdon 1989; Moss 1989) and have, perhaps, lived in Hoonah for as long as 9,000 years (Ackerman 1968). Tlingit artifacts that date back 900 years, and oral history that tells of their presence in the Cross Sound area hundreds of years ago (Schroeder and Kookesh 1990), clearly establish their constancy in the region. In Angoon, evidence for Tlingit occupation, such as a salmon weir and village and fishing sites, has been found for 3,000, 1,600, and 1,000 years before present.

As with all Alaska Native American tribes or communities, Tlingit culture and well-being are inextricably tied to the use of the natural resources that surround them (Gmelch and Gmelch 1985). Fish and halibut, in particular, have been very important for the Tlingit. As stated in a recent report by the Alaska Department of Fish and Game (1991), "Historically, the fish produced by the Tlingit . . . were shared and consumed among large extended family groups who traced ancestry as lineages and clans who resided within large plank clan houses." In addition, large amounts of food were prepared and given away in elaborate feasts, and ceremonies to assert their status, rank, and prestige in the social group.

The people of Angoon and Hoonah, for example, still adhere to many of their traditions that are related to obtaining and using wild resources. This enables them to maintain deep cultural ties with important land and water areas, and with the resources that have sustained their culture for thousands of years (George and Bosworth 1988). In keeping with past traditions, modern Tlingit place a great deal of value on their Alaska Native cultural heritage. This includes subsistence hunting, fishing, and gathering as well as sharing the harvested food (George and Bosworth 1988). Stated simply, "Alaska Native Tlingit culture has traditionally been defined largely by its relationship to the environment. The survival of the Tlingit tradition depends on the sea and land continuing to provide resources; if the foundation of Alaska Native subsistence is weakened, other elements of the culture will begin to crumble" (Gmelch and Gmelch 1985).

The Tlingit continue to fish in the commercial and subsistence fisheries for halibut. While there are no survey data on Tlingit participation in the commercial halibut fishery, it is estimated that some 150 halibut permits are held by Tlingit in rural communities such as Angoon and Kake. Participation in fishing crews and processing is an important activity for tribal members, but again there are no survey data available.

3.1.3.2.3 The Tsimshian

The Tsimshian have utilized halibut and other bottomfish since before historic contact (Stewart 1977). Archaeological studies show evidence of halibut bones, among other types of fish, in prehistoric village sites (de Laguna 1960), in addition to evidence that the Tsimshian had developed special methods and gear for harvesting bottomfish (Stewart 1977).

As with other Alaska Native groups and communities, Tsimshian culture is intricately tied to the surrounding natural resources. As stated in a recent report by the Alaska Department of Fish and Game (1991), "Historically, the fish produced by the . . . Tsimshian were shared and consumed among large extended family groups who traced ancestry back as lineages and clans . . . Large quantities of food also

[were] prepared and given away by the headmen of the extended families in elaborate feasts and ceremonies to publicly demonstrate and validate rank, status, and prestige within the social group."

The abundance and reliability of marine resources enabled fish to serve as the basis for the development of the complex non-agrarian Northwest Coast culture area (Spencer and Jennings 1965). As Bell (1981) states, "With fishery products being so important in the lives of the coastal tribes both as a direct source of food and as trade items with inland groups, it is not surprising to find fish, including halibut, commemorated in the heraldry on the totem poles."

Marine resources continue to play an important role in Tsimshian daily life. Following in the steps of their forefathers, many Tsimshian still harvest halibut by traditional methods. And many residents continue to value highly halibut that is smoked and dried in the traditional way (Alaska Department of Fish and Game 1991).

As Irwin (1984) states, "The people of the Northwest Coast practiced no agriculture. Rather, they were children of the sea. Their life was dominated by a benevolent ocean that teemed with life." Although commercial fishing and other industrialized influences have reduced Tsimshian ability to completely keep their old life ways, the importance of subsistence fishing to their culture and well-being cannot be overstated.

The Tsimshian settlement, and tribal reservation, at Metlakatla is active in the halibut fishery. With reserved water areas and fishing sites, the village harvested 0.45% of all commercially caught halibut in 1990 and ranked 31st of the 48 individual ports with reported landings. Residents of Metlakatla held 27 permits and landed 234,650 pounds of halibut in the commercial fishery and an 11,256 pounds in the subsistence fishery in 1990.

3.1.3.2.4 Customary and Traditional Practices of Alaska Natives in Area 2C

This section is adapted from ADF&G (1991) and describes the 1987 halibut fisheries for Southeast Alaska communities excluding Juneau and Ketchikan. Bottomfish, including halibut, have been an important food fish utilized by the Tlingit, Haida, and Tsimshian in southeast Alaska since before historic contact and continuing to the present. These tribes developed specialized gear and harvesting methods, but have adopted recent modifications of fishing techniques introduced by Euro-American settlers.

Three types of hooks were developed for harvesting halibut. Steam-bent U-shaped hooks of various sizes made of wood tipped with slender bone (and later iron) barbs were used by the Haida and Tsimshian. Carved V-shaped hooks made of two wood arms, fitted and lashed, and tipped with bone or iron barb were used in the northern portions of the southeast by the Tlingits. Bi-pointed throat gorges were also use. All three types of hooks were commonly set as single hooks, in pairs with rig spreaders, or as multiple hooks along longlines. Bait was typically octopus or whole small fish. Set hooks were attached to wood or bladder floats, and were weighted with sinker stones. Sets were checked with open boats. Line was made from spruce root or sinew in the north, and bull kelp, nettle fiber, and cedar bark fiber in the south.

Trolling techniques and rod and reel gear also underwent technological modifications over the years. Skiffs and larger vessels are currently used. Currently, as in the past, most halibut are taken with baited hooks on weighted lines. Lines are set with float, held by hand, or attached to a pole with a reel. Although set lines with multiple hooks are not allowed by regulation for the non-commercial harvest of halibut, this practice does occur and appears to be a continuation of historical harvest methods.

Non-commercial use of halibut has continued alongside the development of commercial fisheries which began in the 1880s. Halibut harvests totaled 705,126 lb in 1987 for Southeast Alaska (Figure 3.3). Estimated total community harvests ranged from five communities with under 1,500 lb of halibut to thirteen communities with greater than 10,000 lb but less than 75,000 lb, and two communities with greater than 150,000 lb. Per person halibut harvests ranged from 1 pound in Klukwan to 77 lb in Meyers Chuck (Figure 3.4). Most harvests occurred in relatively deep, open marine waters near the main winter settlement, but seasonal moves also occurred to camps nearer to halibut.

Halibut were shared and consumed among large extended family groups who traced common ancestry (Figures 3.5 and 3.6). The Tlingit, Haida, and Tsimshian were also avid traders. Halibut were eaten fresh, but also thinly cut, dried, and smoke over racks for later use, especially in northern southeast. Today halibut is halved smoked and frozen. Some use a dehydrator to replace the old system of air drying.

3.1.3.3 Alaska Natives of Area 3A

Area 3A has a number of tribal groups intermingled along the coast. Tlingit live in Yakutat together with Athapaskans, Chugach Eskimo are found throughout the Prince William Sound area, Tanaina Athapaskan Indians are found throughout the Cook Inlet area, Sugpiaq and Koniag Eskimos (who refer to themselves as “Aleuts”) are found in Lower Cook Inlet and on Kodiak Island respectively, and Aleuts are scattered throughout Area 3A. Eyak Athapaskan Indians, once widespread from south of Yakutat through the Copper River Delta, are now found only in the Cordova region. The dispersion of Aleuts through the region is in part due to the resettlement of these peoples from the Aleutian Islands during World War II and in part to the Russian settlers who recruited (some sources say “enslaved”) Aleuts as workers.

Little information is available on the involvement of Alaska Natives in the commercial fishery for halibut in Area 3A. Estimates of permit holders, based on community of residence, suggest that between 100 and 150 Alaska Natives hold permits to fish in the area. Estimates are difficult to arrive at because, for example, the zip code of two Sugpiaq Eskimo communities, English Bay and Port Graham, is the same as that for Homer, a predominantly non-Native settlement. Communities with an Alaska Native population greater than 20% in the region include Old Harbor, Port Lions, Ouzinkie, Larsen Bay, Ahkiok and Karluk on Kodiak Island (Koniag Eskimo); Yakutat (Tlingit); Chenega and Tatitlek (Chugach Eskimo); Port Graham, Seldovia, and English Bay (Sugpiaq Eskimo); and Tyonek (Tanaina).

3.1.3.3.1 The Chugach Eskimo

The Chugach Eskimo have a long history of living throughout Prince William Sound, and have resided there at least since Captain James Cook made the first recorded contact with them in 1778 (Stratton 1989). According to oral tradition and based on research done in the 1930's, there were 8 geographical groups of Chugach residing in the Prince William Sound area. Their villages were always located on the shore line to provide easy access to marine resources (Stratton 1989). These geographical groups or tribes shared their culture and language and came together for feasts, but maintained political independence from each other (Birket-Smith 1953; de Laguna 1956).

Marine resources such as sea mammals and a variety of fish, including salmon, halibut, red snapper, and cod are the staple foods of the Chugach. Dependent on the weather, the Chugach fished for halibut with hooks and lines. They had the most success in this pursuit in the early summer (Birket-Smith 1953).

By the early 1960s, in Chenega, a Chugach Eskimo community, halibut had become the most commonly harvested bottom fish. Like other Alaska Native American tribes and communities, subsistence food sharing was prevalent. Ten out of fourteen households fished for halibut, primarily from late spring to early fall and

shared the catch with any member of the community who wished to partake (Stratton and Chisum 1986). By the mid- 1980s, sharing halibut had become even more common, with ten households (67%) reporting that they gave away halibut and twelve households reporting they had received it (Stratton and Chisum 1986). Following the Exxon Valdez oil spill 1990 subsistence harvests were 60% less than previous years in Chenega.

3.1.3.3.2 Koniag Eskimos

Kodiak-area Alaska Natives refer to themselves as Aleuts, but ethnographically they are Koniag Eskimos, using the Sugpiaq Eskimo dialect (Schroeder, et al; 1987). Archaeological data shows that Kodiak Island was first settled some 8,000 years before present, and the Koniag Eskimos have occupied the island for at least 700 years.

Schroeder et al. (1987) report that "Koniag culture has been strongly focused on the sea, and major subsistence use has been made of marine fish, mammals, and invertebrates" (1987). The wealth of marine resources was such that it is estimated that the population in pre-contact times was between 6,500 and 10,000 people. It is estimated that some 3,100 Koniag Eskimos lived on Kodiak Island and the out-islands in 1983 (Schroeder et al. 1987). Subsistence harvest of halibut is important to Alaska Natives in the six non-road-connected communities of Akhiok, Karluk, Larsen Bay, Old Harbor, Ouzinkie, and Port Lions, as well as in Kodiak City. Highest per-capita levels of halibut subsistence harvest were in Port Lions (85.6 pounds/capita) and Old Harbor (56.7 pounds/capita). Akhiok residents had the lowest halibut subsistence catch and harvested 24.3 pounds/capita in 1987.

The participation of Alaska Natives in the commercial fishery for halibut on and around Kodiak Island is not known, but it is estimated that at least 60 Koniag hold commercial fishing permits. Some Alaska Natives work in the fish processing plants, but the majority of the processing workforce is Filipino.

3.1.3.4 Alaska Natives of Area 3B

Two groups of Alaska Natives inhabit the communities of this area. Chignik, Chignik Lake, Chignik Lagoon, Perryville, and Ivanof on the Lower Alaska Peninsula was populated by Kaniagmuit Eskimos at the time of Russian contact (Schroeder, et al; 1987). The population relocations during the Russian period led to mixing of, and inter-marriage between, Eskimo, Aleut and other Alaska Native groups and families and with Europeans. The communities of Sand Point, King Cove, Cold Bay, and False Pass were developed with the commercial sealing and fishing industry. Their Alaska Native population was drawn from in-migration of Aleut groups from communities further west on the Aleutian Chain. Inter-marriage with European fishermen and sealers has also been frequent, and some Aleuts who were moved to Southeast Alaska during World War II or were sent to a Bureau of Indian Affairs school in Sitka returned to the region with Tlingit spouses. The residents of the area prefer to call themselves "locals" rather than Alaska Natives, although all the communities (with the exception of Cold Bay) have an Alaska Native population greater than 50 per cent of the whole (see Table 3.9). When an Alaska Native descriptor is sought, residents refer to themselves as Aleuts (Schroeder et al. 1987).

Commercial and subsistence fishing are important activities of these communities and halibut features in both. It is estimated that some 40 Alaska Natives hold commercial halibut fishing permits in Area 3B of the 117 permits issued. Employment as crew and in processing plants is unknown at this time.

3.1.3.5 Alaska Natives of Area 4

Area 4 includes the waters surrounding the Aleutian Chain and the Bering Sea. The Alaska Native population of the Pribilof and Aleutian Islands is Aleut. Saint George, Saint Paul, Akutan, Atka, and Nikolski have Alaska Native populations in excess of 39% of the whole population (see Table 3.12). The four Aleutian communities have been year-round Aleut settlements since pre-contact days, and the Aleuts of the Pribilofs were transported to the Islands as seal hunters by the Russians in the late eighteenth century (Schroeder et al. 1987; Veltre and Veltre 1981).

The East Bering Sea communities are populated by Yup'ik Eskimos, and only regional centers such as Nome, Dillingham, Bethel, or special function towns like King Salmon, Naknek, and Port Heiden, have an Alaska Native population of less than 85%.

3.1.3.5.1 The Aleut

Based on archaeological data, the Aleut Indians have lived in the Aleutian archipelago area for at least 4,000 years and probably have been living there for as long as 8,500 years before present. Throughout this time, they have maintained their cultural adaptation to the sea, which serves as the essential provider of nearly all of the basic necessities of life (Veltre and Veltre 1983). As Orbach and Holmes (1983) state, "...fishing in the Pribilofs is centered about a species which is both an Aleut tradition and a commercial prize: halibut."

Aleuts, like other Alaska Native American tribes/communities, are enmeshed culturally and economically with the surrounding natural resources (Veltre and Veltre 1983; Orbach and Holmes 1983; Schroeder, Andersen, Bosworth, Morris, and Wright 1987). In most communities halibut is harvested year round, providing a constant supply of this important resource (Schroeder, Andersen, Bosworth, Morris, and Wright 1987). Most people prefer to eat traditional foods over many of the commercial items that are available. For some, traditional foods comprise as much as 50% of the diet. In addition, many people prefer traditional preservation methods, salting and drying, for example, even though most have freezers (Veltre and Veltre 1983).

Fishing for halibut provides not only valuable nutrition but is important for maintaining social ties within families and between various members of the community. In Atka, most of the fishing is done by men, either alone or in small groups. Women, who normally do not participate in subsistence activities, may sometimes fish for halibut from the shore (Veltre and Veltre 1983) or may even go along on fishing trips with the men (Orbach and Holmes 1983). Besides berry-picking, this is the only harvesting activity where the women are relatively equal partners in the acquisition of resources (Orbach and Holmes 1983).

Once the halibut is brought back, it is shared with the community (Orbach and Holmes 1983; Veltre and Veltre 1983; Schroeder et al. 1987). As Veltre and Veltre state, "Two of the basic tenets of the Aleut subsistence economy since pre-contract times have been cooperation in subsistence endeavors and sharing of the products of hunting, gathering, and fishing. Both cooperation and sharing are still very much a part of resource utilization in Atka today . . ." (1983). Members of Aleut communities derive great satisfaction and pride in being able to share traditional foods that they have caught with their families and with the community as a whole (Veltre and Veltre 1983). As Orbach and Holmes (1983) note, "it is the kindness, remembrance and satisfaction of this activity as much as its support of tradition or sustenance which gives it its value."

3.1.3.5.2 The Yup'ik

Although the area where the Yup'ik live has been inhabited by several different human groups in the last 10,000 years, archaeological evidence suggests that by A.D. 1000 the cultural ancestors of present-day western region Yup'ik Eskimos were living in and utilizing the subsistence resources of the area (Schroeder et al. 1987).

In Togiak, for example, halibut is harvested for subsistence whenever available. However, not being able to rely on halibut year-round in no way detracts from the importance of subsistence fishing for halibut for the Yup'ik. Like other Alaska Native tribes and communities, the Yup'ik will save these catches of halibut for eating at home or will share them with others in the village (Schroeder et al. 1987; Wright, Morris, and Schroeder 1985).

The Yup'ik way of life in intricately entwined with the natural environment and the resources therein. Natural resources are valued not only for their obvious nutritional and economic components but for the cultural and familial glue they provide to the members of the community, particularly for the elderly and those in need. As noted in Schroeder et al. "Family activities, particularly in the Yup'ik and Athapaskan communities, are centered around fishing and hunting. Families are bound together by the distinctive labor roles of men and women and different responsibilities of different age groups. The distribution and exchange of subsistence products link families and provide an expression of kinship ties and social order" (1987).

A Yup'ik individual's psychological well-being and social adjustment are dependent upon fishing and hunting and gathering. Those who participate in the acquisition of the resources as well as those who receive them attach deep personal meaning to the process of harvesting, processing, and sharing subsistence foods. These are based upon traditional values, belief systems, and ideological structures that are culturally learned and culturally maintained (Schroeder et al. 1987). For many Yup'ik men, much like their counterparts in the commercial fishing industry, self-worth is measured by their ability to provide for their families and their community. Disruption of this way of life could lead to many negative consequences, from shaking up the family and social order to substance abuse (Schroeder et al. 1987).

3.1.3.5.3 Kuskokwim

The following is adapted from an ADF&G Subsistence Division report (ADF&G 1993) describing the long term, consistent customary and traditional pattern of use of halibut and Pacific cod in the Kuskokwim area. Halibut, along with a variety of other marine fish species, have been historically harvested in this area since the 1840s. Most of the directed marine fish harvest is conducted by coastal community residents of all ages, and dried halibut is also traded and bartered along local networks. Jigging, spearing, and handpicking are especially important activities for children and youth who learn the practice from elder women and men.

Kuskokwim fishermen have developed a use pattern consisting of methods and means of harvest which are characterized by efficiency and economy of effort and cost. Directed fishing for halibut and Pacific cod begins immediately after herring fishing in June and extends through August in the Nunivak and Nelson Island areas, although July affords the best weather and most productive fishing. Halibut are caught by jigging or longlining, but also in salmon nets in Kuskokwim Bay. Locally made hand-held jigs typically contain two or three baited hooks and weight attached to the center hook; this gear is a traditional method described as early as the 1880s. Manufactured surf-casting rod-and-reel containing one baited circle hook with weight attached is also frequently used, particularly by younger fishermen. Commercial longline gear is also set for halibut, and undersized fish are kept for subsistence. Most halibut fishing crews are composed of both commercial and subsistence fishermen during commercial fishing periods because most families have one marine fishing boat and one set of longline gear. Further, weather and rough seas generally restrict the opportunities for effective fishing, so combining commercial and subsistence efforts takes advantage of limited good weather and saves on gear and gasoline.

Halibut fishing areas are generally in deep waters near each community. Mekoryuk fishermen fish from Cape Etolin south and east along Nunivak island. Halibut are believed to travel northward as the summer progresses, so Nelson Island fishermen follow the schools between the south side of the island and north

of Chinit Point by August. Chefornak and Kipnuk fishermen occasionally fish for halibut along the coast of their communities. Along southern Kuskokwim Bay, halibut are caught incidentally in commercial salmon nets. The proximity, economy, and ease of harvest make halibut an important resource.

Halibut are eaten fresh, dried, and frozen to be cooked in the winter. Halibut heads are highly prized; they are boiled fresh or partially dried. They are filleted and scored like salmon for drying, and are also smoked.

Halibut and other marine fish are shared among community households, particularly the first harvests of the season. A 1986 subsistence survey in Tununak showed that 97% of households participated in halibut harvesting. Halibut was the second single highest species produced for subsistence at 93.5 lb per person. Irregular trade and barter exchanges occurred in which dried and frozen halibut was traded for dried salmon with Kuskokwim River residents.

3.1.3.5.4 Tununak

The following is taken from a description of the 1986 Tununak halibut fishery from a memo from M. Pete to R. Wolfe, ADF&G Subsistence Division (1988). Both commercial and subsistence fishing is conducted primarily with either locally-made, hand-held jigging gear or purchased deep-sea rod-and-reel gear. Although the number has been slowly increasing since the inception of the commercial fishery in 1982, few fishermen use longline gear to catch halibut. Thirty-one of 33 Tununak households sampled (total of 64 households and 325 residents) owned an average of 2.7 units of home-made jigging or purchased rod-and-reel gear; 16 of the 33 owned an average of 1.2 units of longline gear. In 1986, 76% of sampled households reported using only rod-and-reel or home-made jigging gear to catch halibut; 6.1% only used longline gear; and 15% used a combination of jigging, longline and set net gear to catch halibut. Halibut caught in salmon set gill nets is an incidental catch, but taken for subsistence. In all Nelson Island area communities, most area residents retain halibut less than the 32 inch commercial minimum size caught on longlines for subsistence.

3.1.3.5.4.1 Subsistence Fishery

All but one of 33 households sampled attempted to fish for halibut in 1986. The total harvest was 790 halibut, ranging between 1 and 120 and averaging 24 fish/household and 7-11 fish/person. Ten% of the households provided 55 % of the total harvest. The halibut harvest totaled 15,800 lb round weight, approximately 9% of the total subsistence harvest of all resources. All fish harvests accounted for 71% by weight, and halibut accounted for 12% of usable pounds of fish. It provided 94 lb per capita of food, which was second only to herring (439 lb per capita). Expanding the subsample subsistence harvest to the entire Tununak village yields an estimated 30,000 lb in 1986. The annual subsistence harvest for the Nelson Island region may exceed the commercial harvest. The annual quota ranged between 35,000 and 75,000 lb. Expanding the 94 lb of halibut per capita generated from the subsample yields an estimated 94,000 lb of subsistence halibut, greater than the commercial catch for any year prior to 1986.

The implementation of Individual Fishing Quotas (IFQs) and Community Development Quotas (CDQs) for halibut and sablefish in 1995, has resulted in increased fishing opportunities for Western Alaska rural communities. The CDQ program has redirected set percentages of the commercial quota to coastal communities in the BSAI (Table 2.8). Approximately 20% of the halibut commercial quota is allocated to Western Alaska coastal communities. The economic effects of the CDQ program on Western Alaskan communities are discussed below.

3.1.3.5.4.2 Commercial Fishery

Twenty-five of 33 sampled households had members involved in commercial fishing in 1986. Of these, 19 had members involved in the commercial halibut fishery, compared with 20 and 6 households, with members in herring and salmon fisheries, respectively. Mean household income from commercial halibut fishing was $488. Twenty-seven persons earned between $15 and $2,000 for a total income of $16,090 for the community. In 1984, a total of $10,882 was earned from commercial halibut fishing. Commercial fishing produced 10% of total income, and halibut fishing produced 2%. These income amounts may be misleading because wage employment (buyers, cleaners, packers, etc.) is not included. It is important to note that because incomes in rural Western Alaskan communities are low and cost of living is high, the contributions made by subsistence fishing are important.

3.1.4 Non-guided and guided sport fisheries

The halibut non-guided and guided sport fisheries were extensively described in the Council's February 2000 EA/RIR/IRFA to establish a guideline harvest level and implementing management measures for the guided halibut fishery (NPFMC 2000). This data will not be repeated here.

3.2 Description of Affected Communities

3.2.1 Relevant Community Profiles

Previous community profiles developed by the Council are to be found in Langdon and Miller (1983, 1984a and 1984b) and IAI (1991). The communities profiled are those of Akutan, Kodiak, Petersburg, Saint Paul, Sand Point, and Unalaska, Alaska; Bellingham and Seattle, Washington; and Newport, Oregon. The Langdon and Miller study was of the halibut fishery; that by IAI was of the North Pacific groundfish fishery. Both data sets have been fully utilized in this literature review and are the basis for the descriptions in Sections 3.1.1 and 3.1.2 above. Extensive additional material has been drawn from the community profiles developed by the Subsistence Division, Alaska Department of Fish and Game of rural Alaskan coastal communities. This material has been incorporated into Sections 3.1.1 and 3.1.3 above. Information from social impact studies undertaken for or by the Minerals Management Service and the National Park Service, U.S. Department of the Interior, and for the Forest Service, U.S. Department of Agriculture has been incorporated where appropriate.

3.2.2 Size, Composition, and Stability of Affected Work Force

No comprehensive survey of halibut fishermen and processing workers has been undertaken for this FMP amendment. Estimates based on the studies reviewed in Section 3.1.1 are that, in 1990, there were 14,889 fishermen and 4,500 point-of-landing processing workers involved in the halibut fishery. (The estimates of the number of fishermen employed in the fishery developed as part of the economic analysis in Section 3.1.13 above is 14,721; since these estimates were developed separately from different source materials, their similarity indicates that they are realistic.) Langdon and Miller (1984b), using IPHC survey data of the fishery, showed that there were 2,050 halibut fishermen in 1978 and 2,809 fishermen in 1982. The increase was attributed to the shift to the open access "derby" fishery in 1977.

Between 1984 and 1990, 8,212 vessel owners have participated in the fishery, and, in 1990, there were 3,823 permit holders.

In Tables 3.15 and 3.16 the movement in and out of the fishery since 1984 is shown. Only 6% of vessels fished in all seven years between 1984 and 1990. This movement in and out of the fishery has three explanations. First, the short seasons made it possible for fishermen to fish for halibut without affecting their participation in other fisheries. Second, the development of the longline fishery for Pacific cod and

sablefish increased the number of larger vessels able to fish for halibut. Finally, a number of fishermen sought to develop a record of participation in the fishery prior to any consideration of access controls by the Council. For these reasons, the number of fishermen and vessels in the fishery has grown rapidly. Langdon and Miller (1984b) showed that the fishery in 1982 had offered relatively stable and continuous employment for fishermen. The mean age of fishermen in their sample was 40.66 years, and the mean number of years of experience in the halibut fishery was 13.05 years.

The fishery has three principal components; the vessels from "Outside" which tend to be larger and exploit the western halibut fisheries; the vessels from urban Alaskan communities; and the vessels associated with rural Alaskan communities. The rural communities have, in the main, higher proportions of Alaska Natives as residents and fishermen and greater numbers of smaller vessels, particularly skiffs. The Alaskan urban communities, with their better support facilities, have fleets of vessels which include larger longliners similar to those from "Outside" as well as vessels fishing in the local fisheries.

As noted above, this analysis is based upon a study of the literature related to the halibut fishery. The most recent survey of halibut fishermen, carried out in 1982 by Langdon and Miller, showed that 7% of the fishermen were residents of Washington State; 37.5% lived in Southeast Alaska (including Yakutat); 3.2% lived in Prince William Sound communities; 35.6% resided in Cook Inlet communities; 11.1 lived on Kodiak Island, and 3% in the Lower Alaska Peninsula and Aleutian Islands. Of the Alaskan fishermen, 72% lived in urban communities.

The crews are typically paid on a crew-share/boat-share basis. This pattern of payment extends back to the early days of the halibut fishery. The Deep Sea Fishermen's Union (DSFU) founded in 1912, has represented the Puget Sound fishermen in negotiations about pay and conditions with the Fishing Vessel Owner's Association (FVOA) since 1914. This is the only example of organized labor-owner agreements in the fishery.

3.2.3 Relative Economic Importance of the Halibut Fishery

The literature survey did not provided sufficient specific information to assess the economic importance of the halibut fishery to communities. In general, there are few employment opportunities other than commercial fishing available to residents of rural Alaskan communities described in Section 3.1.

ADF&G studies indicate that in many rural areas, subsistence is part of a traditional regional economy, termed a "mixed, subsistence-market economy" (Wolfe and Bosworth 1990). Fishing and hunting are central activities conducted by extended family groups. The family invests in small-scale, efficient technologies, such as fishwheels, gill nets, motorized skiffs and snow machines, for producing food. Subsistence production is not oriented toward market sale or accumulated profit, as is commercial market production. It is directed toward meeting the self-limiting needs of families and small communities (Wolfe and Bosworth 1990).

According to Wolfe and Bosworth (1990), a family's subsistence production is augmented and supported by cash employment by family members. Depending upon the region, employment commonly is in commercial fishing, commercial trapping, and public sector wage employment. Typically, but not always, mean annual monetary incomes in the region are modest and intermittent. Families follow an economic strategy of using a portion of the annual monetary earnings to capitalize in subsistence technologies for producing food. This combination of subsistence and commercial-wage activities by extended family groups characterizes the mixed, subsistence-market economy.

While subsistence halibut fishing is important to the local economies of some rural Alaska communities, quantifying the economic value of those harvests is difficult since these harvests generally are not sold. However, one method of estimating the economic value of halibut subsistence would be to estimate the replacement costs if rural residents were to purchase and import substitutes. If one assumes $3-5 per pound as replacement expenses, the simple "replacement costs" of halibut harvests in rural Alaska is $852,000 - $1,140,000 (Wolfe and Bosworth 1994).

4.0 NEPA REQUIREMENTS: ENVIRONMENTAL IMPACTS OF THE ALTERNATIVES

An environmental assessment (EA) is required by the National Environmental Policy Act of 1969 (NEPA) to determine whether the action considered will result in significant impact on the human environment. If the action is determined not to be significant based on an analysis of relevant considerations, the EA and resulting finding of no significant impact (FONSI) would be the final environmental documents required by NEPA. An environmental impact statement (EIS) must be prepared for major Federal actions significantly affecting the human environment.

The environmental impacts generally associated with fishery management actions are effects resulting from (1) harvest of fish stocks, which may result in changes in food availability to predators and scavengers, changes in the population structure of target fish stocks, and changes in the marine ecosystem community structure; (2) changes in the physical and biological structure of the marine environment as a result of fishing practices (e.g., effects of gear use and fish processing discards); and (3) entanglement/entrapment of non-target organisms in active or inactive fishing gear. None of the preferred alternatives would have such impacts on the environment.

Alternative 1, the no action alternative, nor Alternative 2, to define a halibut subsistence category, would have no significant impact on the environment. No limit or allowable gear is defined for the annual harvest of halibut by subsistence users. Proposed measures aim to legalize the current customary and traditional harvest of halibut. No greater amount or new gear types are proposed under Alternative 2 than are currently in existence in this fishery (Alternative 1).

Based on current information, it is reasonable to assume that the effect on the halibut resource of allocating halibut between user groups is negligible. The IPHC has determined that resource conservation is not a factor in such allocative decisions. If there was a resource conservation concern, the IPHC would be the responsible management body, however, since this is an allocative issue, the management responsibility is delegated to the Council.

The IPHC has notified the Council that halibut stocks are at historically high levels. The IPHC considers the halibut resource to be a single population. Egg and larval drift and subsequent counter migration by young halibut cause significant mixing within the halibut population. The IPHC sets halibut harvest in regulatory areas in proportion to abundance. This harvest philosophy protects against over harvest of what may be separate, but unknown, genetic populations, and spreads fishing effort over the entire range to prevent regional depletion. Small scale local depletion does not have a significant biological effect for the resource as a whole. Ultimately, counter migration and local movement tend to fill in areas with low halibut density, although continued high exploitation will maintain local depletion. However, estimates of biomass and rates of local movement are not available to manage smaller areas.

The 1999 Pacific Halibut Fishery Regulations regulate the halibut fishery (64 FR 13519). This proposed action does not effect halibut bycatch. The halibut population assessment is prepared annually by the IPHC (1999) and is incorporated here by reference. Total setline CEY (constant exploitation yield at a harvest rate of 20%) is still estimated to be high, at just under 68 million pounds in 2000. Total removals in 1999 were 82 million pounds. Subsistence removals were around one percent of total removals.

In summary, none of the alternatives would be expected to have a significant impact on the environment, warranting a Finding of No Significant Impact (FONSI).

4.1 Endangered Species Act

The Endangered Species Act of 1973 as amended (16 U.S.C. 1531 *et seq*; ESA), provides for the conservation of endangered and threatened species of fish, wildlife, and plants. The program is administered jointly by NMFS for most marine mammal species, marine and anadromous fish species, and marine plants species and by USFWS for bird species, and terrestrial and freshwater wildlife and plant species.

The designation of an ESA listed species is based on the biological health of that species. The status determination is either threatened or endangered. Threatened species are those likely to become endangered in the foreseeable future [16 U.S.C. § 1532(20)]. Endangered species are those in danger of becoming extinct throughout all or a significant portion of their range [16 U.S.C. § 1532(20)]. Species can be listed as endangered without first being listed as threatened. The Secretary of Commerce, acting through NMFS, is authorized to list marine fish, plants, and mammals (except for walrus and sea otter) and anadromous fish species. The Secretary of the Interior, acting through USFWS, is authorized to list walrus and sea otter, seabirds, terrestrial plants and wildlife, and freshwater fish and plant species.

In addition to listing species under the ESA, the critical habitat of a newly listed species must be designated concurrent with its listing to the "maximum extent prudent and determinable" [16 U.S.C. § 1533(b)(1)(A)]. The ESA defines critical habitat as those specific areas that are essential to the conservation of a listed species and that may be in need of special consideration. Federal agencies are prohibited from undertaking actions that destroy or adversely modify designated critical habitat. Some species, primarily the cetaceans, which were listed in 1969 under the Endangered Species Conservation Act and carried forward as endangered under the ESA, have not received critical habitat designations.

4.2 Impacts on Endangered or Threatened Species

Endangered and threatened species under the ESA that may be present in the Gulf of Alaska include:

ESA Listed Species

Species currently listed as endangered or threatened under the ESA and occurring in the GOA and/or BSAI groundfish management areas.

Common Name	Scientific Name	ESA Status
Northern Right Whale	*Balaena glacialis*	Endangered
Bowhead Whale [1]	*Balaena mysticetus*	Endangered
Sei Whale	*Balaenoptera borealis*	Endangered
Blue Whale	*Balaenoptera musculus*	Endangered
Fin Whale	*Balaenoptera physalus*	Endangered
Humpback Whale	*Megaptera novaeangliae*	Endangered
Sperm Whale	*Physeter macrocephalus*	Endangered
Snake River Sockeye Salmon	*Oncorhynchus nerka*	Endangered
Short-tailed Albatross	*Diomedia albatrus*	Endangered
Steller Sea Lion	*Eumetopias jubatus*	Endangered and Threatened [2]
Snake River Fall Chinook Salmon	*Oncorhynchus tshawytscha*	Threatened
Snake River Spring/Summer Chinook Salmon	*Oncorhynchus tshawytscha*	Threatened
Spectacled Eider	*Somateria fishcheri*	Threatened
Steller Eider	*Polysticta stelleri*	Threatened

[1] The bowhead whale is present in the Bering Sea area only.

[2] Steller sea lions are listed as endangered west of Cape Suckling and threatened east of Cape Suckling.

Section 7 Consultations. Because halibut fisheries are federally regulated activities, any negative affects of the fisheries on listed species or critical habitat and any takings[1] that may occur are subject to ESA section 7 consultation. NMFS initiates the consultation and the resulting biological opinions are issued to NMFS. The Council may be invited to participate in the compilation, review, and analysis of data used in the consultations. The determination of whether the action "is likely to jeopardize the continued existence of" endangered or threatened species or to result in the destruction or modification of critical habitat is the responsibility of the appropriate agency (NMFS or FWS). If the action is determined to result in jeopardy, the opinion includes reasonable and prudent measures that are necessary to alter the action so that jeopardy is avoided. If an incidental take of a listed species is expected to occur under normal promulgation of the action, an incidental take statement is appended to the biological opinion.

None of the alternatives under consideration would affect the prosecution of the halibut fisheries in a way not previously considered in consultations. The proposed alternatives are designed to improve the long-term productivity of halibut stocks in Sitka Sound. None of the alternatives would affect takes of listed species. Therefore, none of the alternatives are expected to have a significant impact on endangered or threatened species. None of the management alternatives is expected to have an effect on endangered or threatened species for the same reasons cited above.

Short-tailed albatross: In 1997, NMFS initiated a section 7 consultation with USFWS on the effects of the Pacific halibut fishery off Alaska on the short-tailed albatross. USFWS issued a Biological Opinion in 1998 that concluded that the Pacific halibut fishery off Alaska was not likely to jeopardize the continued existence of the short-tailed albatross (USFWS, 1998). USFWS also issued an Incidental Take Statement of two short-tailed albatross in two years (1998 and 1999), reflecting what the agency anticipated the incidental take could be from the fishery action. Under the authority of ESA, USFWS identified non-discretionary reasonable and prudent measures that NMFS must implement to minimize the impacts of any incidental take.

4.3 Marine Mammal Protection Act

Under the Marine Mammal Protection Act, commercial fisheries are classified according to current and historical data on whether or not the fishery interacts with marine mammals. Two groups, takers and non-takers, are initially identified. For takers, further classification then proceeds on the basis of which marine mammal stocks interact with a given fishery. Fisheries that interact with a strategic stock at a level of take, which has a potentially significant impact on that stock would be placed in Category I. Fisheries that interact with a strategic stock and whose level of take has an insignificant impact on that stock, or interacts with a non-strategic stock at a level of take, which has a significant impact on that stock, are placed in Category II. A fishery that interacts only with non-strategic stocks and whose level of take has an insignificant impact on the stocks is placed in Category III.

Species listed under the Endangered Species Act present in the management area were listed in section 2.2. Marine mammals not listed under the ESA that may be present in waters around Sitka include cetaceans, [minke whale (*Balaenoptera acutorostrata*), killer whale (*Orcinus orca*), Dall's porpoise *(Phocoenoides dalli*), harbor porpoise (*Phocoena phocoena*), Pacific white-sided dolphin (*Lagenorhynchus obliquidens*), and the beaked whales (e.g., *Berardius bairdii* and *Mesoplodon spp*.)] as well a pinniped, Pacific harbor seal (*Phoca vitulina*), and the sea otter (*Enhydra lutris*).

[1] the term "take" under the ESA means "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or attempt to engage in any such conduct" (16 U.S.C. ' 1538(a)(1)(B).

The above listed marine mammals are not normally taken in long-line or jig fisheries. The subject fisheries (Alaska halibut longline/set line (state and Federal waters)) are classified as Category III. Steller sea lion were the only species recorded as taken incidentally in these fisheries according to records dating back to 1990 (Hill et al 1997.)

4.4 Coastal Zone Management Act

Implementation of each of the alternatives would be conducted in a manner consistent, to the maximum extent practicable, with the Alaska Coastal Management Program within the meaning of section 30(c)(1) of the Coastal Zone Management Act of 1972 and its implementing regulations.

4.5 Conclusions or Finding of No Significant Impact

In view of the analysis presented in this document, I have determined that the proposed action to create a halibut subsistence category in Alaska waters would not significantly affect the quality of the human environment. Based on this determination, the preparation of an environmental impact statement for the proposed action is not required by section 102(2)(C) of the National Environmental Policy Act or its implementing regulations.

_____ _____

Assistant Administrator for Fisheries, NOAA Date

5.0 REGULATORY IMPACT REVIEW: ECONOMIC AND SOCIOECONOMIC IMPACTS OF THE ALTERNATIVES

This section provides information about the economic and socioeconomic impacts of the alternatives including identification of the individuals or groups that may be affected by the proposed action, the nature of these impacts, and quantification of the economic impacts where possible.

The requirements for all regulatory actions specified in E.O. 12866 are summarized in the following statement from the order:

> In deciding whether and how to regulate, agencies should assess all costs and benefits of available regulatory alternatives, including the alternative of not regulating. Costs and benefits shall be understood to include both quantifiable measures (to the fullest extent that these can be usefully estimated) and qualitative measures of costs and benefits that are difficult to quantify, but nevertheless essential to consider. Further, in choosing among alternative regulatory approaches, agencies should select those approaches that maximize net benefits (including potential economic, environment, public health and safety, and other advantages; distributive impacts; and equity), unless a statute requires another regulatory approach.

This section also addresses the requirements of both E.O. 12866 and the Regulatory Flexibility Act to provide adequate information to determine whether an action is "significant" under E.O. 12866 or will result in "significant" impacts on small entities under the RFA.

E. O. 12866 requires that the Office of Management and Budget review proposed regulatory programs that are considered to be "significant". A "significant regulatory action" is one that is likely to:

> (1) Have an annual effect on the economy of $100 million or more or adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or State, local, or tribal governments or communities;
>
> (2) Create a serious inconsistency or otherwise interfere with an action taken or planned by another agency;
>
> (3) Materially alter the budgetary impact of entitlements, grants, user fees, or loan programs or the rights and obligations of recipients thereof; or
>
> (4) Raise novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in this Executive Order.

A regulatory program is "economically significant" if it is likely to result in the effects described above. The RIR is designed to provide information to determine whether the proposed regulation is likely to be "economically significant."

A history of legal actions related to subsistence in Alaska is lengthy, complicated and unresolved. The Federal and state governments have different and legitimate interpretations of subsistence and authorities for management. **However, it is important for the reviewer to understand that the issues surrounding Title VIII of the Alaska National Interest Lands Conservation Act (ANILCA) and the Secretaries of the Interior and Agriculture to implement a joint program to grant a preference for subsistence uses of fish and wildlife resources on public lands has no application to the decision facing the Council in**

its definition of subsistence for Pacific halibut. The Council may legally choose from the proposed management alternatives and options presented below to address its stated goal of legitimizing the customary and traditional halibut subsistence fishery.

5.1 Alternatives Considered

5.1.1 Alternative 1: No Action

Current Federal regulations developed by IPHC and implemented by NMFS do not provide for customary and traditional subsistence practices by residents of rural Alaskan communities. The status quo alternative would continue the current application of halibut sportfishing regulations to subsistence harvests in Alaska. Continued conflict would occur between Federal and state enforcement agencies and rural Alaskans engaging in customary and traditional halibut subsistence practices.

Under Alternative 1 (no action), the halibut regulations would not be revised to legitimize halibut subsistence fishing. There would be no change in the impacts to affected persons or to the halibut biomass under this alternative.

5.1.2 Alternative 2: Allow the harvest of halibut for subsistence.

5.1.2.1 Option 1.Define subsistence.

The Council included the following definition of halibut subsistence in the analysis. It was recommended to the Council by its Halibut Subsistence Committee.

Halibut subsistence regulations are needed to allow the continued practice of long-term customary and traditional practices of fishing halibut for food for families in a non-commercial manner for non-economic consumption. Subsistence is defined as 'non-commercial fishing for food.'

5.1.2.2 Option 2. Define eligibility (*residency defined as one calendar year)

Suboption A.
1. Members of Alaska Native Federally-recognized tribes with customary and traditional use of halibut.
2. Other permanent rural residents* of communities with customary and traditional use of halibut.

Suboption B. Alaska rural residents* as defined in ANILCA and identified in the table entitled 'Alaska Rural Places and Native Groups with Subsistence Halibut Uses,' and will also include other communities for which customary and traditional findings are developed in the future.

Suboption C.
1. Members of Alaska Native Federally-recognized tribes with customary and traditional use of halibut are eligible.
2. Other permanent rural residents* who have legitimate subsistence needs in communities with customary and traditional use of halibut are eligible.

Need will be determined by:

1. State of Alaska
2. Tribes
3. Co-management authority

Suboption D. Members of Alaska Native Federally-recognized tribes with customary and traditional use of halibut.

Suboption E. Members of Alaska Native Federally-recognized tribes who reside in rural communities with customary and traditional use of halibut. *(This language also may be substituted under Suboptions A, C, or D.)*

The Council must weigh the proposed definitions for eligibility against its stated goal of legitimizing the existing halibut subsistence fishery, while increasing neither the number of subsistence fishers nor halibut removals. Defining who is eligible to participate in the fishery is an important aspect of designing a workable program. First, eligibility criteria must be fair and equitable. That is, the stated Council intent is to match the eligibility definition with the current subsistence users.

Suboption A, "members of Alaska Native Federally-recognized tribes with customary and traditional use of halibut," is also referred to as the "tribal plus" option. Under it, about 88,663 Alaskans are eligible, of which about 42,003 are Alaska Natives and 46,659 are not Alaska Natives (Table 5.1). Eligibility is determined in two ways. You must be: (1) a permanent resident in a listed rural community; or (2) a card-carrying member of a listed tribe. The listed communities and tribes in Table 5.2 are rural places or tribal groups with a demonstrated customary and traditional use of halibut (the current list is based on Division of Subsistence studies and findings by the Alaska Board of Fisheries of which areas have customary and traditional uses of halibut). This option includes all the Alaska Natives who have established subsistence halibut uses. It also includes all permanent non-residents of rural communities in areas with subsistence halibut uses. The suboption is administratively simple – eligibility is based on residency in a listed rural community or on tribal membership, which are factors easy to verify. The suboption does not split rural communities into two groups -- those who can fish and those who cannot. The suboption allows for Alaska Natives in Juneau, Ketchikan, and the Kenai area to fish in customary areas, which is a common practice. This contains a "tribal" standard for eligibility.

Suboption A (and C and D) includes tribal members regardless of where they reside. It includes 5,540 tribal residents of Juneau, Ketchikan, Saxman, Kenai-Soldotna, and Ninilchik, that would be excluded under Suboption B (Table 5.3). Nearly 40,000 non-Native residents would be excluded under all options.

Table 5.3. Urban tribal members included and non-Natives excluded under Suboption A.

Community	Native	non-Native	Total
Juneau	3,462	23,289	26,751
Ketchikan	1,296	6,967	8,263
Kenai-Soldotna	693	9,116	9,809
Ninilchik	89	367	456
Total	5,540	39,739	45,279

Another change made in April 2000 based on a staff recommendation to clarify language then in Suboption A may have inadvertently altered Council intent. Language in the initial review version of the analysis ("in such Native villages") was replaced by "of communities with customary and traditional use of halibut." The tables and discussion in the current and previous versions of the analysis reflect the revised language. This results in 'fixing' the number of non-Natives to 46,659 rather than 44,412 (a reduction of 2,247 non-Natives) under all suboptions (Table 5.5). The Council may choose to adopt either language and intent since both are discussed in the analysis.

Table 5.1. Option 2, Suboption A. Members of Alaska Native Federally-Recognized Tribes with Customary and Traditional Use of Halibut and Other Permanent Rural Residents in Such Native Villages

Sources: Alaska Department of Fish and Game; Alaska Department of Labor

Rural Place*	Organized tribal Entity**	Municipality or Census Designated Place	Population (1995)	Percent Alaska Native	Number Alaska Natives	Number Non-Natives	Halibut Coastal District	Use Pattern 1 = regular 2 = periodic 3 = undocumented
District 2C								
Angoon	Angoon Community Association	Municipality	601	82.3%	495	106	2C	1
Coffman Cove	****	Municipality	254	6.9%	18	236	2C	1
Craig	Craig Community Association	Municipality	1,946	22.9%	446	1,500	2C	1
Edna Bay	****	Census Designated Place	79	0.0%	0	79	2C	1
Elfin Cove	****	Census Designated Place	48	1.8%	1	47	2C	1
Gustavus	****	Census Designated Place	328	3.9%	13	315	2C	1
Haines	Chilkoot Indian Association	Municipality	1,363	18.1%	247	1,116	2C	1
Hollis	****	Census Designated Place	106	2.7%	3	103	2C	1
Hoonah	Hoonah Indian Association	Municipality	903	67.2%	607	296	2C	1
Hydaburg	Hydaburg Cooperative Assocation	Municipality	406	89.1%	362	44	2C	1
Hyder	****	Census Designated Place	138	1.0%	1	137	2C	1
Nonrural	Aukquan Traditional Council***	*****	3,770	100.0%	3,770	0	2C	1
Nonrural	Central Council Tlingit & Haida Indian Tribes	*****					2C	1
Nonrural	Douglas Indian Association	*****					2C	1
Kake	Organized Village of Kake	Municipality	696	73.4%	511	185	2C	1
Kasaan	Organized Village of Kasaan	Municipality	41	53.7%	22	19	2C	1
Nonrural	Ketchikan Indian Corporation	*****	1,717	100.0%	1,717	0	2C	1
Klawock	Klawock Cooperative Association	Municipality	759	54.3%	412	347	2C	1
Klukwan	Chilkat Indian Village	Census Designated Place	165	86.8%	143	22	2C	1
Metlakatla	Metlakatla Indian Community, Annette Island Reserve	Census Designated Place	1,540	82.9%	1,277	263	2C	1
Meyers Chuck	****	Census Designated Place	35	10.8%	4	31	2C	1
Pelican	****	Municipality	209	29.3%	61	148	2C	1
Petersburg	Petersburg Indian Association	Municipality	3,374	10.1%	341	3,033	2C	1
Point Baker	****	Census Designated Place	62	0.0%	0	62	2C	1
Port Alexander	****	Municipality	98	2.5%	2	96	2C	1
Port Protection	****	Census Designated Place	64	1.6%	1	63	2C	1

Rural Place*	Organized tribal Entity**	Municipality or Census Designated Place	Population (1995)	Percent Alaska	Number Alaska	Number Non-	Halibut Coastal	Use Pattern 1 = regular

				Native	Natives	Natives	District	2 = periodic 3 = undocumented
Saxman	Organized Village of Saxman	Municipality	394	76.9%	303	91	2C	1
Sitka	Sitka Tribe of Alaska	Municipality	9,194	20.9%	1,922	7,272	2C	1
Skagway	Skagway Village	Municipality	811	5.5%	45	766	2C	1
Tenakee Springs	****	Municipality	107	9.6%	10	97	2C	1
Thorne Bay	****	Municipality	650	1.2%	8	642	2C	1
Whale Pass	****	Census Designated Place	92	2.7%	2	90	2C	1
Wrangell	Wrangell Cooperative Association	Municipality	2,758	20.0%	552	2,206	2C	1
		District 2C Communities	*32,708*	*40.6%*	*13,293*	*19,415*		

District 3A

Akhiok	Native Village of Akhiok	Municipality	80	93.5%	75	5	3A	1
Chenega Bay	Native Village of Chanega	Census Designated Place	96	69.2%	66	30	3A	1
Cordova	Native Village of Eyak	Municipality	2,568	11.2%	288	2,280	3A	1
Karluk	Native Village of Karluk	Census Designated Place	58	91.5%	53	5	3A	1
Nonrural	Kenaitze Indian Tribe	*****	775	100.0%	775	0	3A	1
Nonrural	Village of Salamatoff	*****	113	100.0%	113	0	3A	1
Kodiak City	Lesnoi Village (Woody Island)	Municipality	13,498	10.7%	1,443	12,055	3A	1
Kodiak City	Native Village of Afognak	Municipality					3A	1
Kodiak City	Shoonaq'' Tribe of Kodiak***	Municipality					3A	1
Larsen Bay	Native Village of Larsen Bay	Municipality	130	84.4%	110	20	3A	1
Nanwalek	Native Village of Nanwalek	Census Designated Place	162	91.1%	148	14	3A	1
Nonrural	Ninilchik Village	*****	116	100.0%	116	0	3A	1
Old Harbor	Village of Old Harbor	Municipality	310	88.7%	275	35	3A	1
Ouzinkie	Native Village of Ouzinkie	Municipality	259	85.2%	221	38	3A	1
Port Graham	Native Village of Port Graham	Census Designated Place	170	90.4%	154	16	3A	1
Port Lions	Native Village of Port Lions	Municipality	233	67.6%	158	75	3A	1
Seldovia	Seldovia Village Tribe	Municipality	289	15.2%	44	245	3A	1
Tatitlek	Native Village of Tatitlek	Census Designated Place	124	86.6%	107	17	3A	1
Yakutat	Yakutat Tlingit Tribe	Municipality	801	55.1%	441	360	3A	1
		District 3A Communities	*19,782*	*23.2%*	*4,586*	*15,196*		

Rural Place*	Organized tribal Entity**	Municipality or Census Designated Place	Population (1995)	Percent Alaska Native	Number Alaska Natives	Number Non-Natives	Halibut Coastal District	Use Pattern 1 = regular 2 = periodic

								3 = undocumented
District 3B								
Chignik Bay	Native Village of Chignik	Municipality	141	45.2%	64	77	3B	1
Chignik Lagoon	Native Village of Chignik Lagoon	Census Designated Place	65	56.6%	37	28	3B	1
Chignik Lake	Chignik Lake Village	Census Designated Place	154	91.8%	141	13	3B	1
Cold Bay	****	Municipality	107	5.4%	6	101	3B	1
False Pass	Native Village of False Pass	Municipality	73	76.5%	56	17	3B	1
Ivanof Bay	Ivanoff Bay Village	Census Designated Place	28	94.3%	26	2	3B	1
King Cove	Agdaagux Tribe of King Cove	Municipality	716	39.3%	281	435	3B	1
King Cove	Native Village of Belkofski	Municipality					3B	1
Nelson Lagoon	Native Village of Nelson Lagoon	Census Designated Place	88	80.7%	71	17	3B	1
Perryville	Native Village of Perryville	Census Designated Place	104	94.4%	98	6	3B	1
Sand Point	Pauloff Harbor Village	Municipality	844	49.3%	416	428	3B	1
Sand Point	Native Village of Unga	Municipality					3B	1
Sand Point	Qagan Toyagungin Tribe of Sand Point Village	Municipality					3B	1
		District 3B Communities	*2,320*	*51.6%*	*1,196*	*1,124*		
Districts 4A-D								
Akutan	Native Village of Akutan	Municipality	436	13.6%	59	377	4A-D	1
Atka	Native Village of Atka	Municipality	77	92.9%	71	6	4A-D	1
Nikolski	Native Village of Nikolski	Census Designated Place	27	82.9%	22	5	4A-D	1
St. George	Pribilof Islands Aleut Communities of St. Paul Island & St. George Islands	Municipality	151	94.9%	143	8	4A-D	1
St. Paul	Pribilof Islands Aleut Communities of St. Paul Island & St. George Islands	Municipality	767	66.1%	507	260	4A-D	1
Unalaska	Qawalingin Tribe of Unalaska	Municipality	4,083	8.4%	342	3,741	4A-D	1
	District 4A-D Communities	*Districts 4A-D Communities*	*5,541*	*20.7%*	*1,145*	*4,396*		
District 4E								
Chefornak	Village of Chefornak	Municipality	371	97.5%	362	9	4E	1
Gambell	Native Village of Gambell	Municipality	628	96.2%	604	24	4E	1
Mekoryak	Native Village of Mekoryak	Municipality	212	99.4%	211	1	4E	1
Newtok	Newtok Village	Census Designated Place	275	93.2%	256	19	4E	1
Nightmute	Native Village of Nightmute	Municipality	189	95.4%	180	9	4E	1
Nightmute	Umkumiute Native Village	Municipality					4E	1
Rural Place*	Organized tribal Entity**	Municipality or Census Designated Place	Population (1995)	Percent Alaska Native	Number Alaska Natives	Number Non-Natives	Halibut Coastal District	Use Pattern 1 = regular 2 = periodic 3 = undocumented
Savoonga	Native Village of Savoonga	Municipality	604	95.2%	575	29	4E	1

Toksook Bay	Native Village of Toksook Bay	Municipality	485	95.5%	463	22	4E	1
Tununak	Native Village of Tununak	Census Designated Place	354	96.2%	341	13	4E	1
Wales	Native Village of Wales	Municipality	173	88.9%	154	19	4E	1
Aleknagik	Native Village of Aleknagik	Municipality	182	83.2%	151	31	4E	2
Clark's Point	Village of Clark''s Point	Municipality	63	88.3%	56	7	4E	2
Dillingham	Native Village of Dillingham	Municipality	2,243	55.8%	1,252	991	4E	2
Dillingham	Native Village of Ekuk	Municipality					4E	2
Egegik	Egegik Village	Municipality	143	70.5%	101	42	4E	2
Egegik	Village of Kanatak	Municipality					4E	2
King Salmon	****	Census Designated Place	539	15.5%	84	455	4E	2
Kipnuk	Native Village of Kipnuk	Census Designated Place	544	97.5%	530	14	4E	2
Kongiganak	Native Village of Kongiganak	Census Designated Place	336	97.3%	327	9	4E	2
Levelock	Levelock Village	Census Designated Place	116	82.9%	96	20	4E	2
Manokotak	Manokotak Village	Municipality	402	95.6%	384	18	4E	2
Naknek	Naknek Native Village	Census Designated Place	617	41.0%	253	364	4E	2
Nome	King Island Native Community	Municipality	3,576	52.1%	1,863	1,713	4E	2
Nome	Nome Eskimo Community	Municipality					4E	2
Pilot Point	Native Village of Pilot Point	Municipality	74	84.9%	63	11	4E	2
Port Heiden	Native Village of Port Heiden	Municipality	126	72.3%	91	35	4E	2
South Naknek	South Naknek Village	Census Designated Place	146	79.4%	116	30	4E	2
Alakanuk	Village of Alakanuk	Municipality	604	95.8%	579	25	4E	3
Bethel	Orutsararmuit Native Village	Municipality	5,195	63.9%	3,319	1,876	4E	3
Brevig Mission	Native Village of Brevig Mission	Municipality	265	92.4%	245	20	4E	3
Chevak	Chevak Native Village	Municipality	682	92.9%	634	48	4E	3
Council	Native Village of Council	Census Designated Place	8	62.5%	5	3	4E	3
Eek	Native Village of Eek	Municipality	283	95.7%	271	12	4E	3
Elim	Native Village of Elim	Municipality	281	91.7%	258	23	4E	3
Emmonak	Chuloonawick Native Village	Municipality	762	92.1%	702	60	4E	3
Emmonak	Emmonak Village	Municipality					4E	3
Golovin	Chinik Eskimo Community	Municipality	148	92.9%	137	11	4E	3
Goodnews Bay	Native Village of Goodnews Bay	Municipality	253	95.9%	243	10	4E	3
Hooper Bay	Native Village of Hooper Bay	Municipality	996	95.9%	955	41	4E	3
Hooper Bay	Native Village of Paimiut	Municipality					4E	3

Rural Place*	Organized tribal Entity**	Municipality or Census Designated Place	Population (1995)	Percent Alaska Native	Number Alaska Natives	Number Non-Natives	Halibut Coastal District	Use Pattern 1 = regular 2 = periodic 3 = undocumented
Kotlik	Native Village of Hamilton	Municipality	543	96.9%	526	17	4E	3
Kotlik	Village of Bill Moore''s Slough	Municipality					4E	3
Kotlik	Village of Kotlik	Municipality					4E	3

Koyuk	Native Village of Koyuk	Municipality	258	94.8%	245	13	4E	3
Kwigillingok	Native Village of Kwigillingok	Census Designated Place	326	95.0%	310	16	4E	3
Napakiak	Native Village of Napakiak	Municipality	326	94.3%	308	18	4E	3
Napaskiak	Native Village of Napaskiak	Municipality	404	94.8%	383	21	4E	3
Oscarville	Oscarville Traditional Village	Census Designated Place	42	91.2%	38	4	4E	3
Platinum	Platinum Traditional Village	Municipality	44	92.2%	41	3	4E	3
Quinhagak	Native Village of Kwinhagak	Municipality	549	93.8%	515	34	4E	3
Scammon Bay	Native Village of Scammon Bay	Municipality	434	96.5%	419	15	4E	3
Shaktoolik	Native Village of Shaktoolik	Municipality	199	94.4%	188	11	4E	3
Sheldon Point	Native Village of Sheldon's Point	Municipality	131	92.7%	121	10	4E	3
Solomon	Village of Solomon	Census Designated Place	6	100.0%	6	0	4E	3
St. Michael	Native Village of Saint Michael	Municipality	332	91.2%	303	29	4E	3
Stebbins	Stebbins Community Association	Municipality	475	94.8%	450	25	4E	3
Teller	Native Village of Mary''s Igloo	Municipality	274	91.3%	250	24	4E	3
Teller	Native Village of Teller	Municipality					4E	3
Togiak	Traditional Village of Togiak	Municipality	700	87.3%	611	89	4E	3
Tuntutuliak	Native Village of Tuntutuliak	Census Designated Place	340	96.7%	329	11	4E	3
Twin Hills	Twin Hills Village	Census Designated Place	75	92.4%	69	6	4E	3
Ugashik	Ugashik Village	Census Designated Place	5	85.7%	4	1	4E	3
Unalakleet	Native Village of Unalakleet	Municipality	764	81.8%	625	139	4E	3
White Mountain	Native Village of White Mountain	Municipality	209	87.8%	184	25	4E	3
	District 4E Communities	*District 4E Communities*	*28,311*	*76.9%*	*21,783*	*6,528*		
Total Districts			**88,662**	**47.4%**	**42,003**	**46,659**		

* Places where subsistence (wild food harvest and use) is a principal characteristic of the community's economy and way of life, as determined by the Alaska Joint Board of Fisheries and Game

** Indian entities recognized and eligible to receive services from the United States Bureau of Indian Affairs, cf., Federal Register, February 16, 1995, v. 60, no. 32, p. 9249-9255.

*** Indian entities that have applied for recognized status.

**** No Alaska Native tribe is headquartered in community.

Table 5.2. Alaska Native Groups in Areas with Subsistence Halibut Uses

Sources: Alaska Department of Fish and Game; Alaska Department of Labor

Place With tribal Headquarters	Organized tribal Entity*	Number Alaska Natives in Community	Halibut Coastal District	Use Pattern 1 = regular 2 = periodic 3 = undocumented
District 2C				
Angoon	Angoon Community Association	495	2C	1
Craig	Craig Community Association	446	2C	1
Haines	Chilkoot Indian Association	247	2C	1
Hoonah	Hoonah Indian Association	607	2C	1
Hydaburg	Hydaburg Cooperative Assocation	362	2C	1
Juneau	Aukquan Traditional Council**	3,770	2C	1
	Central Council Tlingit & Haida Indian Tribes			
	Douglas Indian Association			
Kake	Organized Village of Kake	511	2C	1
Kasaan	Organized Village of Kasaan	22	2C	1
Ketchikan	Ketchikan Indian Corporation	1,717	2C	1
Klawock	Klawock Cooperative Association	412	2C	1
Klukwan	Chilkat Indian Village	143	2C	1
Metlakatla	Metlakatla Indian Community, Annette Island Reserve	1,277	2C	1
Petersburg	Petersburg Indian Association	341	2C	1
Saxman	Organized Village of Saxman	303	2C	1
Sitka	Sitka Tribe of Alaska	1,922	2C	1
Skagway	Skagway Village	45	2C	1
Wrangell	Wrangell Cooperative Association	552	2C	1
	Other 2C Places without tribal Offices***	124	2C	1
	District 2C Communities	*13,293*		
District 3A				
Akhiok	Native Village of Akhiok	75	3A	1
Chenega Bay	Native Village of Chanega	66	3A	1
Cordova	Native Village of Eyak	288	3A	1
Karluk	Native Village of Karluk	53	3A	1
Kenai-Soldotna	Kenaitze Indian Tribe	775	3A	1
	Village of Salamatoff	113		
Kodiak City	Lesnoi Village (Woody Island)	1,443	3A	1
	Native Village of Afognak			
	Shoonaq'' Tribe of Kodiak**			
Larsen Bay	Native Village of Larsen Bay	110	3A	1
Nanwalek	Native Village of Nanwalek	148	3A	1
Ninilchik	Ninilchik Village	116	3A	1
Old Harbor	Village of Old Harbor	275	3A	1
Ouzinkie	Native Village of Ouzinkie	221	3A	1
Port Graham	Native Village of Port Graham	154	3A	1
Port Lions	Native Village of Port Lions	158	3A	1
Seldovia	Seldovia Village Tribe	44	3A	1
Tatitlek	Native Village of Tatitlek	107	3A	1
Yakutat	Yakutat Tlingit Tribe	441	3A	1
	District 3A Communities	*4,586*		

Place With tribal Headquarters	Organized tribal Entity*	Number Alaska Natives in	Halibut Coastal District	Use Pattern 1 = regular 2 = periodic

		Community		3 = undocumented
District 3B				
Chignik Bay	Native Village of Chignik	64	3B	1
Chignik Lagoon	Native Village of Chignik Lagoon	37	3B	1
Chignik Lake	Chignik Lake Village	141	3B	1
False Pass	Native Village of False Pass	56	3B	1
Ivanof Bay	Ivanoff Bay Village	26	3B	1
King Cove	Agdaagux Tribe of King Cove Native Village of Belkofski	281	3B	1
Nelson Lagoon	Native Village of Nelson Lagoon	71	3B	1
Perryville	Native Village of Perryville	98	3B	1
Sand Point	Pauloff Harbor Village Native Village of Unga Qagan Toyagungin Tribe of Sand Point Village	416	3B	1
	Other 3B Places without tribal Offices****	6	3B	1
	District 3B Communities	*1,197*		
Districts 4A-D				
Akutan	Native Village of Akutan	59	4A-D	1
Atka	Native Village of Atka	71	4A-D	1
Nikolski	Native Village of Nikolski	22	4A-D	1
St. George	Pribilof Islands Aleut Communities of St. Paul Island & St. George Islands	143	4A-D	1
St. Paul	Pribilof Islands Aleut Communities of St. Paul Island & St. George Islands	507	4A-D	1
Unalaska	Qawalingin Tribe of Unalaska	342	4A-D	1
	District 4A-D Communities	*1,145*		
District 4E				
Chefornak	Village of Chefornak	362	4E	1
Gambell	Native Village of Gambell	604	4E	1
Mekoryak	Native Village of Mekoryak	211	4E	1
Newtok	Newtok Village	256	4E	1
Nightmute	Native Village of Nightmute Umkumiute Native Village	180	4E	1
Savoonga	Native Village of Savoonga	575	4E	1
Toksook Bay	Native Village of Toksook Bay	463	4E	1
Tununak	Native Village of Tununak	341	4E	1
Wales	Native Village of Wales	154	4E	1
Aleknagik	Native Village of Aleknagik	151	4E	2
Clark's Point	Village of Clark''s Point	56	4E	2
Dillingham	Native Village of Dillingham Native Village of Ekuk	1,252	4E	2
Egegik	Egegik Village Village of Kanatak	101	4E	2
Kipnuk	Native Village of Kipnuk	530	4E	2
Levelock	Levelock Village	96	4E	2
Manokotak	Manokotak Village	384	4E	2
Naknek Area	Naknek Native Village	337	4E	2

Place With tribal Headquarters	Organized tribal Entity*	Number Alaska Natives in Community	Halibut Coastal District	Use Pattern 1 = regular 2 = periodic 3 = undocumented
Nome	King Island Native Community	1,863	4E	2
	Nome Eskimo Community			
Pilot Point	Native Village of Pilot Point	63	4E	2
Port Heiden	Native Village of Port Heiden	91	4E	2
South Naknek	South Naknek Village	116	4E	2
Alakanuk	Village of Alakanuk	579	4E	3
Bethel	Orutsararmuit Native Village	3,319	4E	3
Brevig Mission	Native Village of Brevig Mission	245	4E	3
Chevak	Chevak Native Village	634	4E	3
Council	Native Village of Council	5	4E	3
Eek	Native Village of Eek	271	4E	3
Elim	Native Village of Elim	258	4E	3
Emmonak	Chuloonawick Native Village	702	4E	3
	Emmonak Village			
Golovin	Chinik Eskimo Community	137	4E	3
Goodnews Bay	Native Village of Goodnews Bay	243	4E	3
Hooper Bay	Native Village of Hooper Bay	955	4E	3
	Native Village of Paimiut			
Kongiganak	Native Village of Kongiganak	327	4E	3
Kotlik	Native Village of Hamilton	526	4E	3
	Village of Bill Moore''s Slough			
	Village of Kotlik			
Koyuk	Native Village of Koyuk	245	4E	3
Kwigillingok	Native Village of Kwigillingok	310	4E	3
Napakiak	Native Village of Napakiak	308	4E	3
Napaskiak	Native Village of Napaskiak	383	4E	3
Oscarville	Oscarville Traditional Village	38	4E	3
Platinum	Platinum Traditional Village	41	4E	3
Quinhagak	Native Village of Kwinhagak	515	4E	3
Scammon Bay	Native Village of Scammon Bay	419	4E	3
Shaktoolik	Native Village of Shaktoolik	188	4E	3
Sheldon Point	Native Village of Sheldon's Point	121	4E	3
Solomon	Village of Solomon	6	4E	3
St. Michael	Native Village of Saint Michael	303	4E	3
Stebbins	Stebbins Community Association	450	4E	3
Teller	Native Village of Mary''s Igloo	250	4E	3
	Native Village of Teller			
Togiak	Traditional Village of Togiak	611	4E	3
Tuntutuliak	Native Village of Tuntutuliak	329	4E	3
Twin Hills	Twin Hills Village	69	4E	3
Ugashik	Ugashik Village	4	4E	3
Unalakleet	Native Village of Unalakleet	625	4E	3
White Mountain	Native Village of White Mountain	184	4E	3
	District 4E Communities	*21,783*		
Total Districts		**42,004**		

* Indian entities recognized and eligible to receive services from the United States Bureau of Indian Affairs, cf., Federal Register, February 16, 1995, v. 60, no. 32, p. 9249-9255.

** Applying for recognized status.

*** Coffman Cove, Edna Bay, Elfin Cove, Gustavus, Hollis, Hyder, Meyers Chuck, Pelican, Point Baker, Port Alexander, Port Protection, Tenakee Springs, Thorne Bay, Whale Pass

**** Cold Bay

Table 5.4. Option 2, Suboption B. Alaska Rural Places in Areas with Subsistence Halibut Uses

Sources: Alaska Department of Fish and Game; Alaska Department of Labor

Rural Place*	Organized Entity	Population (1995)	Percent Alaska Native	Number Alaska Natives	Number Non-Natives	Halibut Coastal District	Use Pattern 1 = regular 2 = periodic 3 = undocumented
District 2C							
Angoon	Municipality	601	82.3%	495	106	2C	1
Coffman Cove	Municipality	254	6.9%	18	236	2C	1
Craig	Municipality	1,946	22.9%	446	1,500	2C	1
Edna Bay	Census Designated Place	79	0.0%	0	79	2C	1
Elfin Cove	Census Designated Place	48	1.8%	1	47	2C	1
Gustavus	Census Designated Place	328	3.9%	13	315	2C	1
Haines	Municipality	1,363	18.1%	247	1,116	2C	1
Hollis	Census Designated Place	106	2.7%	3	103	2C	1
Hoonah	Municipality	903	67.2%	607	296	2C	1
Hydaburg	Municipality	406	89.1%	362	44	2C	1
Hyder	Census Designated Place	138	1.0%	1	137	2C	1
Kake	Municipality	696	73.4%	511	185	2C	1
Kasaan	Municipality	41	53.7%	22	19	2C	1
Klawock	Municipality	759	54.3%	412	347	2C	1
Klukwan	Census Designated Place	165	86.8%	143	22	2C	1
Metlakatla	Census Designated Place	1,540	82.9%	1,277	263	2C	1
Meyers Chuck	Census Designated Place	35	10.8%	4	31	2C	1
Pelican	Municipality	209	29.3%	61	148	2C	1
Petersburg	Municipality	3,374	10.1%	341	3,033	2C	1
Point Baker	Census Designated Place	62	0.0%	0	62	2C	1
Port Alexander	Municipality	98	2.5%	2	96	2C	1
Port Protection	Census Designated Place	64	1.6%	1	63	2C	1
Saxman	Municipality	394	76.9%	303	91	2C	1
Sitka	Municipality	9,194	20.9%	1,922	7,272	2C	1
Skagway	Municipality	811	5.5%	45	766	2C	1
Tenakee Springs	Municipality	107	9.6%	10	97	2C	1
Thorne Bay	Municipality	650	1.2%	8	642	2C	1
Whale Pass	Census Designated Place	92	2.7%	2	90	2C	1
Wrangell	Municipality	2,758	20.0%	552	2,206	2C	1
	District 2C Communities	*27,221*	*28.7%*	*7,806*	*19,415*		
District 3A							
Akhiok	Municipality	80	93.5%	75	5	3A	1
Chenega Bay	Census Designated Place	96	69.2%	66	30	3A	1
Cordova	Municipality	2,568	11.2%	288	2,280	3A	1
Karluk	Census Designated Place	58	91.5%	53	5	3A	1
Kodiak City	Municipality	13,498	10.7%	1,443	12,055	3A	1
Larsen Bay	Municipality	130	84.4%	110	20	3A	1
Nanwalek	Census Designated Place	162	91.1%	148	14	3A	1
Old Harbor	Municipality	310	88.7%	275	35	3A	1
Ouzinkie	Municipality	259	85.2%	221	38	3A	1
Port Graham	Census Designated Place	170	90.4%	154	16	3A	1
Port Lions	Municipality	233	67.6%	158	75	3A	1
Seldovia	Municipality	289	15.2%	44	245	3A	1
Tatitlek	Census Designated Place	124	86.6%	107	17	3A	1
Yakutat	Municipality	801	55.1%	441	360	3A	1
	District 3A Communities	*18,778*	*19.1%*	*3,582*	*15,196*		
Rural Place*	Organized Entity	Population (1995)	Percent Alaska Native	Number Alaska Natives	Number Non-Natives	Halibut Coastal District	Use Pattern 1 = regular 2 = periodic

District 3B							
Chignik Bay	Municipality	141	45.2%	64	77	3B	1
Chignik Lagoon	Census Designated Place	65	56.6%	37	28	3B	1
Chignik Lake	Census Designated Place	154	91.8%	141	13	3B	1
Cold Bay	Municipality	107	5.4%	6	101	3B	1
False Pass	Municipality	73	76.5%	56	17	3B	1
Ivanof Bay	Census Designated Place	28	94.3%	26	2	3B	1
King Cove	Municipality	716	39.3%	281	435	3B	1
Nelson Lagoon	Census Designated Place	88	80.7%	71	17	3B	1
Perryville	Census Designated Place	104	94.4%	98	6	3B	1
Sand Point	Municipality	844	49.3%	416	428	3B	1
	District 3B Communities	*2,320*	*51.6%*	*1,196*	*1,124*		
Districts 4A-D							
Akutan	Municipality	436	13.6%	59	377	4A-D	1
Atka	Municipality	77	92.9%	71	6	4A-D	1
Nikolski	Census Designated Place	27	82.9%	22	5	4A-D	1
St. George	Municipality	151	94.9%	143	8	4A-D	1
St. Paul	Municipality	767	66.1%	507	260	4A-D	1
Unalaska	Municipality	4,083	8.4%	342	3,741	4A-D	1
	Districts 4A-D Communities	*5,541*	*20.7%*	*1,145*	*4,396*		
District 4E							
Chefornak	Municipality	371	97.5%	362	9	4E	1
Gambell	Municipality	628	96.2%	604	24	4E	1
Mekoryak	Municipality	212	99.4%	211	1	4E	1
Newtok	Census Designated Place	275	93.2%	256	19	4E	1
Nightmute	Municipality	189	95.4%	180	9	4E	1
Savoonga	Municipality	604	95.2%	575	29	4E	1
Toksook Bay	Municipality	485	95.5%	463	22	4E	1
Tununak	Census Designated Place	354	96.2%	341	13	4E	1
Wales	Municipality	173	88.9%	154	19	4E	1
Aleknagik	Municipality	182	83.2%	151	31	4E	2
Clark's Point	Municipality	63	88.3%	56	7	4E	2
Dillingham	Municipality	2,243	55.8%	1,252	991	4E	2
Egegik	Municipality	143	70.5%	101	42	4E	2
King Salmon	Census Designated Place	539	15.5%	84	455	4E	2
Kipnuk	Census Designated Place	544	97.5%	530	14	4E	2
Kongiganak	Census Designated Place	336	97.3%	327	9	4E	2
Levelock	Census Designated Place	116	82.9%	96	20	4E	2
Manokotak	Municipality	402	95.6%	384	18	4E	2
Naknek	Census Designated Place	617	41.0%	253	364	4E	2
Nome	Municipality	3,576	52.1%	1,863	1,713	4E	2
Pilot Point	Municipality	74	84.9%	63	11	4E	2
Port Heiden	Municipality	126	72.3%	91	35	4E	2
South Naknek	Census Designated Place	146	79.4%	116	30	4E	2
Alakanuk	Municipality	604	95.8%	579	25	4E	3
Bethel	Municipality	5,195	63.9%	3,319	1,876	4E	3
Brevig Mission	Municipality	265	92.4%	245	20	4E	3
Chevak	Municipality	682	92.9%	634	48	4E	3

Rural Place*	Organized Entity	Population (1995)	Percent Alaska Native	Number Alaska Natives	Number Non-Natives	Halibut Coastal District	Use Pattern 1 = regular 2 = periodic 3 = undocumented
Council	Census Designated Place	8	62.5%	5	3	4E	3
Eek	Municipality	283	95.7%	271	12	4E	3
Elim	Municipality	281	91.7%	258	23	4E	3
Emmonak	Municipality	762	92.1%	702	60	4E	3
Golovin	Municipality	148	92.9%	137	11	4E	3
Goodnews Bay	Municipality	253	95.9%	243	10	4E	3
Hooper Bay	Municipality	996	95.9%	955	41	4E	3
Kotlik	Municipality	543	96.9%	526	17	4E	3
Koyuk	Municipality	258	94.8%	245	13	4E	3
Kwigillingok	Census Designated Place	326	95.0%	310	16	4E	3
Napakiak	Municipality	326	94.3%	308	18	4E	3
Napaskiak	Municipality	404	94.8%	383	21	4E	3
Oscarville	Census Designated Place	42	91.2%	38	4	4E	3
Platinum	Municipality	44	92.2%	41	3	4E	3
Quinhagak	Municipality	549	93.8%	515	34	4E	3
Scammon Bay	Municipality	434	96.5%	419	15	4E	3
Shaktoolik	Municipality	199	94.4%	188	11	4E	3
Sheldon Point	Municipality	131	92.7%	121	10	4E	3
Solomon	Census Designated Place	6	100.0%	6	0	4E	3
St. Michael	Municipality	332	91.2%	303	29	4E	3
Stebbins	Municipality	475	94.8%	450	25	4E	3
Teller	Municipality	274	91.3%	250	24	4E	3
Togiak	Municipality	700	87.3%	611	89	4E	3
Tuntutuliak	Census Designated Place	340	96.7%	329	11	4E	3
Twin Hills	Census Designated Place	75	92.4%	69	6	4E	3
Ugashik	Census Designated Place	5	85.7%	4	1	4E	3
Unalakleet	Municipality	764	81.8%	625	139	4E	3
White Mountain	Municipality	209	87.8%	184	25	4E	3
	District 4E Communities	*28,311*	*76.9%*	*21,783*	*6,528*		
Total Districts		**82,171**	**43.2%**	**35,512**	**46,659**		

* Places where subsistence (wild food harvest and use) is a principal characteristic of the community's economy and way of life, as determined by the Alaska Joint Board of Fisheries and Game

Note that the original Council motion under this suboption was to deem only Tribal members with halibut C&T eligible for halibut subsistence. This choice now appears below under Suboption D.

Table 5.5. Maximum number of unique rural residents included under Suboption B.

Rural Place*	Alaska Natives	Non-Natives	Total (1995)
Coffman Cove	18	236	254
Cold Bay	6	101	107
Edna Bay	0	79	79
Elfin Cove	1	47	48
Gustavus	13	315	328
Hollis	3	103	106
Hyder	1	137	138
Meyers Chuck	4	31	35
Pelican	61	148	209
Point Baker	0	62	62
Port Alexander	2	96	98
Port Protection	1	63	64
Tenakee Springs	10	97	107
Thorne Bay	8	642	650
Whale Pass	2	90	92
Total	130	2,247	2,377

Suboption B uses a rural eligibility standard. This is similar to the rural eligibility standard found in ANILCA. The list of "Alaska Rural Places and Alaska Native Groups" was developed by the Alaska Board of Fisheries and Game. Rural places are defined as places outside the boundaries of non-subsistence areas, as determined by the Alaska Joint Board of Fisheries and Game (AS 16.05.258(c)). In state statute, a rural area means "a community or area of the state in which the non-commercial, customary and traditional use of fish or game for personal or family consumption is a principal characteristic of the economy of the community or area" (AS 16.05.940(27)). Suboption B, "Alaska rural residents as defined in ANILCA and identified in the table entitled 'Alaska Rural Places and Native groups with Subsistence Halibut Uses,' will also include other communities for which customary and traditional findings are developed in the future." Suboption B contains a "rural" standard for eligibility, rather than a distinction based on tribal membership.

The ANILCA definition, and the process for determining eligibility under that definition, is clear, objective, and well-established. However, Suboption B is a choice, rather than a requirement because Title VIII of ANILCA does not apply to Convention waters, which include the maritime areas off the west coast of the United States and Canada where halibut are found. The lack of application of Title VIII eliminates some of the more confusing aspects of the subsistence issue currently being resolved by the Federal government and the State of Alaska. There are certain provisions of the ANILCA definition that must be considered if Suboption B was adopted without revision, especially those provisions concerning "customary trade" and "barter." These are considered under Option 5.

While Suboption B does utilize ANILCA's "rural" resident eligibility criteria, it does not necessarily endorse other provisions of ANILCA, the regulations adopted thereunder, or the Federal Subsistence Board 's (FSB) implementation of the program. Instead, the option as currently stated represents something of a hybrid. The list or table of 114 "Alaska Rural Places with Subsistence Halibut Uses" incorporated in Option B reflects the state Boards' determinations of rural or non rural status(or, as it is now called, identification of "non-subsistence areas"). (*See* discussion under Section 5.1.2.2.1) The FSB has identified a more expansive list of rural communities- including the recent addition of all the road connected areas on the Kenai peninsula. A new list/table would have to be generated to reflect the FSB's identification of rural places.

With the exception of the native only preference (provided in Option 2, Suboption A.1 or C.1), all of the suboptions incorporate a rural residency requirement. (That rural residency requirement is further modified by the requirement that the community have customary and traditional use of halibut.) The analysis of suboptions A-C thus far has relied upon the list of 114 rural places identified by the state. The Council may adopt- if only as a starting point- the State's list, the FSB's list or to create a wholly different list of rural places based on some other reasonable criteria.

Suboption C, "tribal members and other permanent residents of Native villages who have legitimate subsistence needs," is similar to Suboption A, except this suboption includes an individual eligibility standard based on "need" applied to Natives and non-Natives (see Table 5.1 for the approximate maximum number of persons that could be deemed eligible).

Suboption C (also a "tribal plus"option) is the definition used in the Migratory Bird Treaty Act, which has not yet been implemented. The Native Halibut Subsistence Working Group requested that the tribes be authorized to determine eligibility of non-Natives, as a type of cooperative agreement. Under this approach, the tribes would determine who else may participate in what is primarily a tribal fishery. Individual standards that might be used by tribes to qualify non-Natives might include: (1) some history of use of longline skates for halibut fishing, (2) some level of food need that cannot be met with the two-hook, two-bag sport limit, and (3) some degree of participation in the tribal fishery pattern, such as a person married to a tribal member, or a helper in the tribal fishery. There may be other acceptable standards. The State's criteria for subsistence eligibility (AS 16.05.258(c)) are listed in Section 1.2.2.

Two other examples of subsistence user criteria in Federal law are those found in the Endangered Species Act (ESA) and the Marine Mammal Protection Act (MMPA). The ESA provides a specific exemption for "any Indian, Aleut, or Eskimo who is an Alaska Native who resides in Alaska . . . or any non-native permanent resident of an Alaskan Alaska Native village . . . if such taking [by the non-Native] is primarily for subsistence purposes." There is an additional requirement that "any taking under [the exemption] may not be accomplished in a wasteful manner." The exemption under the ESA can be revoked if the "taking materially and negatively affects the endangered or threatened species." The MMPA also exempts "the taking of any marine mammals by any Indian, Aleut, or Eskimo who resides in Alaska *and who dwells on the coast of the North Pacific Ocean or the Arctic Ocean* if such taking . . . is for subsistence purposes; or ...for purposes of creating and selling authentic Alaska Native articles of handicrafts and clothing." (emphasis added)

Although these definitions are not suboptions in this analysis, a brief discussion about them may prove informative. Both the ESA and the MMPA provisions are exemptions, more similar to Suboption C than Suboptions A and B, which are definitions designed primarily for subsistence. Specifically, the taking of endangered species and marine mammals are prohibited unless an exemption is granted. Under the ESA, the exemption is granted to (1) any Indian, Aleut, or Eskimo who is an Alaska Native who resides in Alaska, or (2) any non-Native permanent resident of an Alaskan Alaska Native village; if the take of an endangered species is primarily for subsistence purposes. Notice that to qualify for the exemption an Indian, Aleut, or Eskimo need only reside in Alaska; however, a non-Native must be a permanent resident of an "Alaskan Alaska Native village." The MMPA exemption extends to Indians, Aleuts, and Eskimos who: (1) reside in Alaska; (2) dwell on the coast of the North Pacific Ocean or the Arctic Ocean; and (3) take for subsistence or handicraft purposes. The MMPA subsistence exemption does not extend to non-Native subsistence users.

The exemptions in the ESA and MMPA both have residency requirements. The MMPA also requires that a person be an "Indian, Aleut, or Eskimo." The difficulty with both of these definitions is the individual determination of whether the take was for "subsistence purposes." This difficulty, which is also a difficulty with Suboption C, can be avoided by defining the group of individuals that is authorized as subsistence

users, rather than defining the behavior authorized, i.e., takes for "subsistence purposes." Suboptions A and B can be used to define the group of individuals that is authorized as subsistence users; however, knowing the person is a qualified user does not mean every activity should be considered subsistence

Determining who should be members of the group is another factor to consider. As explained earlier, this determination will potentially affect the resulting volume of harvest. Suboption A limits the group to "members of Alaska Native Federally-recognized tribes with customary and traditional use of halibut." Suboption B limits the group to "Alaska rural residents" as defined in ANILCA *and* as identified in the table entitled "Alaska Rural Places and Alaska Native Groups with Subsistence Halibut Uses." Both of these suboptions can be used to define a group of individuals authorized to harvest subsistence halibut. The preferred suboption should be one that best describes the group to which the Council intends to grant subsistence use of halibut.

Suboptions A and C are consistent with the intent ANILCA. ANILCA was intended to provide for Native subsistence uses, which is not the same as intending a *Native only* preference. While statutory Native only preferences are permissible under current U.S. Supreme Court precedent, ANILCA does not provide an example. Instead, the 9th Circuit has pointed to ANILCA as a good example of Congress selecting a "race neutral" solution. Therefore, the subsistence uses of both Native and non Native rural residents were given protection and priority under ANILCA. Either option would be consistent with other Federal law (ESA, MMPA, migratory bird treaty, Fur Seal treaty, and the International Whaling Convention). Congress has repeatedly granted exclusive or in-common harvest rights to Indian tribes in the Lower 48. The U. S. Supreme Court has upheld these laws and treaties based upon the special Federal trust responsibility and Federal constitutional powers of Congress over Indian affairs. Thus Congress can constitutionally grant a subsistence priority limited solely to Alaska Natives or Alaska Natives and other legitimate non-Native subsistence users on Federal lands (Daniel and Starkey 1997). Suboption B is also consistent with ANILCA, but as previously discussed ANILCA is not required to be applied for halibut in Convention waters.

Suboption C would lead to rules that are administratively complex because it requires some entity to do individual qualification determinations. While it is administratively feasible, it is also contentious and expensive in time and money. The determination of eligibility of other permanent rural residents with legitimate subsistence needs might be delegated by the Council to the State of Alaska, tribes, or a co-management authority. There are an estimated 46,659 "other permanent residents" of rural communities, of which some portion would apply for permits and need to have eligibility determined (Table 5.1). The Council would still oversee such a program and retain final authority over any delegation, that is, an individualized determination process will still place a management burden on the Council. Lastly, the State cannot make the individual determinations called for under Suboption C.2.1 because the residency requirement conflicts with the State constitution and the Alaska Supreme Court decisions in *McDowell v. State*, 785 P.2d 1(Alaska 1989) and *State v. Kenaitze*, 894 P.2d 632(Alaska 1995).

Individuals applying for a permit would submit an application to the delegated authority. The application would provide information used by the delegated authority to determine if the applicant met the eligibility standard. A definition and measures of "legitimate subsistence needs" would need to be developed by the Council, so that a consistent standard is applied to all applicants. Applicants meeting the standard would receive permits, while applicants not meeting the standard would be denied a permit. Some appeal process would need to be established for review of applicants who were denied. Permit awards would occur annually to this class of applicants.

An individual eligibility system is relatively costly to administer. The State has experience with individual needs-based eligibility systems through administering Tier II subsistence hunts. The cost of such a system may be estimated by comparing it to the State of Alaska's Tier II subsistence permit system administered annually by the Alaska Department of Fish and Game. The costs for scoring and awarding Tier II

subsistence permits to approximately 20,000 applicants were about $40,000 annually during the 1990s. In their administration of Tier II subsistence hunts, the state Boards only undertake this added burden in times of shortage, when the resource is not sufficient to support all subsistence uses. *See* AS 16.05.258(b)(4); 5 AAC 99.010(c). By contrast, the halibut stocks are ample to support all subsistence uses as well as other consumptive uses.

Suboption D, "members of Alaska Native Federally-recognized tribes with customary and traditional use of halibut" was added to the analysis in April 2000. This suboption allows the Council to select only part 1 of Suboption A. It would qualify approximately 42,003 persons associated with 118 Alaska Native tribes with an estimated halibut harvest of 636,813 lb. This suboption recognizes the cultural component of halibut customary and traditional uses of halibut by Alaska Natives.

Suboption E, "members of Alaska Native Federally-recognized tribes who reside in rural communities with customary and traditional use of halibut" is intended to limit halibut subsistence fishing by tribal members to those rural places that have C&T designation for halibut. Suboption E would qualify tribal members who reside in communities with customary and traditional use of halibut, or 35,512 tribal members (Table 5.4). It would exclude 5,540 urban tribal members.*(This language also may be substituted under Suboptions A, C, or D.)*

Eligibility and areas open for halibut fishing by eligible subsistence users are separate issues. Persons eligible for subsistence fishing for halibut under the council's standards would be able to subsistence fish in any waters open to subsistence halibut fishing, unless otherwise restricted by the council. In practice, most fishing by subsistence users occurs in waters close to the community of residence of the fisher, as shown by subsistence use area mapping by the Division of Subsistence, Alaska Department of Fish and Game. It would be expected that most subsistence halibut fishing by qualified subsistence users would occur in waters near the community of residence of the fisher.

It is also a common pattern for tribal subsistence users to fish and hunt in subsistence areas near their natal community. Some tribal members who are resident in another community will return seasonally to their home village to engage in subsistence activities with an extended family group. In part this is done because extended families have established customary patterns of use of particular areas within a traditional area used by members of the tribal community. Fishers returning home continue this use pattern in these customary areas. In part this also is done to contribute labor to the extended family in fishing and processing fish. While each federally-recognized tribe listed in Table 5.1 is headquartered in a single community, registered members of the tribe will be residents of a number of communities because of marriage patterns. Marriage partners are commonly found outside the local tribe or tribe segment (such as a clan). At marriage, it is common for one partner to move to the community of the spouse and away from the community where the person's tribe is headquartered. Dispersion of tribal members across several communities also occurs because of schooling and employment opportunities in other communities. As stated above, dispersed tribal members typically hunt and fish for subsistence near their current community of residence, which will be outside the community of their tribal headquarter. In addition, some tribal members will return home to seasonally fish and hunt, depending upon a number of personal and family factors.

Regulations pertaining to subsistence fishing and hunting should preserve the option for mobility of subsistence users if they are to be congruent with customary use patterns. For instance, regulations that might restrict a tribal member to fishing only within the area surrounding the community where the tribe is headquartered would probably place considerable constraints on subsistence harvests for the portion of the tribe who reside in other communities due to marriage, employment, and schooling. Either it would prohibit a person from subsistence fishing altogether, because the waters near their residence would be closed to them because they are a member of a different tribal group. Or it would force the dispersed tribal members to return home to subsistence fish, at an increased economic and social cost. The customary

pattern for most would be to fish in the open areas near their current place of residence. A regulation that allowed an eligible subsistence user to fish in any waters open to subsistence fishing would not place restrictions on customary patterns of movement of tribal members.

In the rural designations by the Federal Subsistence Board, eligibility and the areas open for subsistence harvesting by eligible subsistence users are linked. Eligibility is based on residency in particular rural communities. A resident of a rural community may participate in subsistence hunts and fisheries only within certain Game Management Units and fishing areas open for subsistence harvests to that community, as identified by the Federal Subsistence Board. For instance, residents of Kotzebue in Game Management Unit 23 may hunt moose for subsistence in Game Management Unit 23, but not in neighboring Units 21, 22, 24, or 26. The Federal Subsistence Board identifies areas which have been customarily and traditionally used by residents of each rural community and limits residents to these areas. By contrast, the rural designations by the Alaska Joint Board of Fisheries and Game do not link eligibility and areas open for subsistence harvesting by subsistence users. Under state regulations, a subsistence user is free to harvest in any area open for subsistence fishing or hunting. As stated above, in practice most subsistence users harvest fish and game in areas close to their place of residence, while some users are mobile, returning to customary and traditional areas to harvest.

In summary, the most important consideration for the Council in its choice of a suboption for eligibility is to legitimize those individuals currently participating in the halibut subsistence fishery. Secondarily, the process of identifying legitimate subsistence users should be simple. The Council and NMFS would likely not want to have to develop a process whereby eligibility would be determined for *individuals*. Suboptions A and B would legitimize entire Alaska Native tribes or both Alaska Native and non-Native rural residents from eligible communities. Suboption C would require a determination of "who has legitimate subsistence needs." Such eligibility determinations can be costly and time-consuming, especially if they are required for individuals. A method to avoid such determinations would use an objective standard for eligibility. An objective standard may already be established, as in the case of Suboption B, or can be established during program development, as in the case of Suboption A. In either case, the most important consideration is that objective criteria be established to avoid individual determinations. Suboption D would define halibut subsistence for Alaska Native tribal members only.

Under Suboption A (based on tribal plus), there are 88,662 persons eligible, of which 42,003 are Alaska Native and 46,659 are non-Natives (Table 5.1). Under Suboption B (based on rural standard), there are 82,171 persons eligible of which 35,512 are Alaska Natives and 46,659 are non-Natives (Table 5.4). Under Suboption C (tribal plus with individual determination), up to 88,662 persons may be eligible of which 42,003 are Alaska Native and 46,659 are non-Natives (Table 5.1). The 5,540 fewer Alaska Natives eligible under Suboptions B and E compared with the other suboptions are Alaska Native tribal members residing in Juneau, Ketchikan, and the Kenai-Soldotna-Ninilchik areas, while Suboptions A and C include them. However, Suboption B includes 550 tribal members and 5,735 non-Natives who are not included under any other suboption. Suboption D (tribal only) would qualify approximately 42,003 tribal members only (Table 5.1). Suboption E (rural tribal members) would qualify tribal members who reside in communities with customary and traditional use of halibut, or 35,512 tribal members (Table 5.4).

History of the Rural/Nonrural Determinations for the Kenai Peninsula (excerpted from 65 FR 40730, June 30, 2000)

At its September 26, 1990, meeting, the Federal Subsistence Board made preliminary rural determinations, including nonrural findings for Sitka, Saxman, Kodiak, and some communities on the Kenai Peninsula. The rural communities on the Kenai Peninsula included Ninilchik, Seldovia, Port Graham, Nanwalek, Hope, and Cooper Landing. Proposed nonrural determinations for the Kenai Peninsula included the Kenai area, including Kenai, Soldotna, Sterling, Nikiski, Salamatof, Kalifonsky, Kasilof, and Clam Gulch; the Homer area, including Homer, Anchor Point, Kachemak City, and Fritz Creek; and the Seward area, including Seward and Moose Pass.

At its December 17, 1990, meeting, the Board finalized its rural determinations. The Board determined that Sitka, Saxman, and Kodiak were rural communities and made no changes on the Kenai Peninsula. On February 14, 1991, Alaska Legal Services filed a Petition for Reconsideration on behalf of the Kenaitze Tribe, asking that the Board change its nonrural determination for the Kenai Peninsula. The Board denied the request and explained its action to the proponents in a letter dated May 7, 1991.

In June 1995, eight public hearings were held on the Kenai Peninsula to gather testimony on the proposed customary and traditional use determinations for moose in Units 7 and 15. Although rural determinations were not the focus of those hearings, many of those who testified indicated their dissatisfaction with the current rural determinations previously established by the Board.

In September 1995, the Southcentral Regional Council met in Anchor Point and, in response to the public testimony received that summer and at its meeting, developed a recommendation to the Board that the entire Kenai Peninsula be considered rural. Council members spoke to the divisiveness of the current rural determinations, problems with aggregating and separating communities using the current process, and the importance of fishing and hunting to residents of the Kenai Peninsula. A dissenting minority of Council members felt that not all the communities on the Kenai Peninsula could be characterized as rural. When the Board subsequently met to discuss the recommendation, the Board decided that the most appropriate course of action was for the Regional Council to hold public hearings on the Kenai Peninsula to allow for public comment on the proposal. However, at the next Regional Council meeting in February 1996, a motion to hold hearings failed, and no meetings were held.

In January 1998, the Institute of Social and Economic Research (ISER) issued a report commissioned by the Native American Rights Fund on behalf of the Kenaitze Tribe, assessing the rural character of Kenai Peninsula areas determined by the Board to be nonrural. The ISER report compares the characteristics of Kenai Peninsula communities, especially Kenai, Soldotna, and Homer, with Kodiak, Sitka, and Saxman, communities determined by the Board to be rural. The report found that on measures of rural character such as population density, seasonal employment, and levels of harvest, the Kenai Peninsula is similar to one or more of the areas the Board designated as rural. Only on the indicators of employment growth and diversity, according to the report, did the Kenai Peninsula not exhibit characteristics comparable to communities classified as rural.

At the March 1998 meeting of the Southcentral Regional Council, the Kenaitze Tribe requested that the entire Kenai Peninsula be made rural. The request asserted that special circumstances are present that warrant making this determination without waiting for the review of all rural determinations that is scheduled to occur following receipt of data from the 2000 census. The Board again suggested that the Regional Council hold public hearings on the Kenai Peninsula. The Regional Council voted to do so at its fall 1998 meeting. Public hearings were held in November 1998 in Seward, Homer, and Kenai. In March 1999, after hearing the report of the public hearings and further testimony from members of the Kenaitze Tribe and their attorneys, the Southcentral Regional Council again recommended that the Board approve

the Kenaitze request to reconsider its 1990 nonrural determinations and declare the entire Kenai Peninsula rural in light of the special circumstances identified.

At its May 1999 meeting, the Board decided to reconsider the Kenai Peninsula communities. In March 2000, the Board granted the Kenaitze tribe's request and determined the entire Kenai Peninsula to be rural, including all the road connected communities. If the NPFMC chooses to rely on the FSB's identification of rural places as a component of its halibut subsistence eligibility criteria, the result will be that tens of thousands more people could be eligible users than if the listing of rural places is based on the state boards findings.

Table 5.6 shows the 1998 population for the Kenai Peninsula, based on the Alaska Department of Labor Population Overviews, 1990 and 1998. The Federal Subsistence Board has determined the following populations on the Kenai Peninsula to be rural for the purposes of the Federal subsistence statute:

2,399 people Rural Roaded Kenai Peninsula (Cooper Landing CDP, Fox River CDP, Happy Valley CDP, Hope CDP, Nikolaevsk CDP, Ninilchik CDP)

903 people Rural Non-Roaded Kenai Peninsula (Halibut Cove CDP, Jakolof Bay CDP, Nanwalek CDP, Port Graham CDP, Seldovia).

45,361 people Rural Roaded Kenai Peninsula (includes the Kenai-Soldotna area, Homer Area, and Seward Area). These communities were deemed "rural" in the March 2000 determination.

The ANILCA regulations are not identical to the state standards. The recent FSB determination that the entire Kenai Peninsula qualifies as "rural"- including the urbanized road connected areas- is one manifestation of the divergent approach also available to the Council. (Other communities have also indicated their interest in requesting that the FSB determine their communities rural, in light of the Kenai determination. *See Anchorage Daily News*, May 20, 2000.)

Table 5.6. Population Changes, Kenai Borough, 1990 to 1998
(Source: Alaska Population Overview: 1998 Estimates, AK Dept.Labor).

		1990	1998	Change
Kenai Area				
	Clam Gulch CDP	79	108	37%
	Cohoe CDP	508	602	19%
	Kalifonsky CDP	285	338	19%
	Kasilof CDP	383	558	46%
	Kenai City	6,327	7,058	12%
	Nikiski CDP	2,743	3,060	12%
	Ridgeway CDP	2,018	2,381	18%
	Salamatof CDP	999	1,135	14%
	Soldotna City	3,482	4,134	19%
	Sterling CDP	3,802	5,888	55%
	Kenai Area	**20,626**	**25,262**	**22%**
Other Kenai Area				
	Remainder Kenai-Cook Inlet Census Subarea	**6,751**	**7,639**	**13%**
Homer Area				
	Anchor Point CDP	866	1,188	37%
	Fritz Creek CDP	1,426	1,998	40%
	Homer City	3,660	4,155	14%
	Kachemak City	365	419	15%
	Homer Area	**6,317**	**7,760**	**23%**
Seward Area				
	Crown Point CDP	62	102	65%
	Grouse Creek Group	580	639	10%
	Moose Pass CDP	81	134	65%
	Primrose CDP	63	62	-2%
	Remainder of Seward Census Subarea	658	723	10%
	Seward City	2,699	3,040	13%
	Seward Area	**4,143**	**4,700**	**13%**
Rural Roaded Peninsula				
	Cooper Landing CDP	243	283	16%
	Fox River CDP	382	439	15%
	Happy Valley CDP	309	400	29%
	Hope CDP	161	135	-16%
	Nikolaevsk CDP	371	467	26%
	Ninilchik CDP	456	675	48%
	Rural Roaded Peninsula	**1,922**	**2,399**	**25%**
Rural Non-Roaded Peninsula				
	Halibut Cove CDP	78	74	-5%
	Jakolof Bay CDP	28	51	82%
	Nanwalek CDP	158	180	14%
	Port Graham CDP	166	190	14%
	Seldovia	459	408	-11%
	Rural Non-Roaded Peninsula	**889**	**903**	**2%**
Total Roaded Non-Rural Kenai Peninsula		**37,837**	**45,361**	**20%**
Total Roaded Rural Kenai Peninsula		**1,922**	**2,399**	**25%**
Total Roaded Kenai Peninsula		**39,759**	**47,760**	**20%**
Rural Non-Roaded Non-Peninsula				
	Tyonek CDP	154	152	-1%

To the extent that the adoption of halibut subsistence rules would cause some anglers to substitute subsistence fishing for their present participation under sportfish regulations, local economies would experience a redistribution in angler related expenditures. Sportfishing provides monetary benefits to tourism related businesses and non-monetary benefits to anglers, and both the guided and non-guided sectors are central components to a number of coastal communities (NPFMC 2000). If participation under the subsistence rules affords sportfishers in a particular area similar benefits at a lesser cost than traditional angling, then substitution would be likely. Therefore, a determination of halibut sportfishing effort conducted by local residents, on a community level, would be necessary for predicting the degree of impacts of such a substitution effect.

It is typically assumed that spending by local residents does not have an overall impact to a region's economy because the spending does not represent 'new money' coming into the area. In other words, decreased spending by locals in any particular economic sector would be offset by expenditures on different goods and services within the region. This assumption is more likely to hold true the greater the diversification of the regional economy. However, if economic activity is heavily dependent upon a number of concentrated industries, as is common in coastal Alaska, and if local residents could continue to participate in a halibut fishery without incurring typical sportfishing costs, there is an increased probability that local expenditures will leak out of the regional economy.

Regardless of whether or not there is an overall regional impact, expenditures will be redistributed away from some sectors and directed towards others, and this redistribution could have a substantial effect on industries such as the charter sector. If charter operations are bound by sportfishing rules and fishers choose to harvest their halibut under subsistence guidelines, they would redirect their spending to alternative means of reaching fishing grounds. If the perceived benefits from subsistence fishing warranted the purchase of private vessels, then local consumption of charter services would diminish. The potential effects would vary according to area, depending on the demand for charter services by local residents. For example, few Alaska residents and even fewer local residents purchase charter services in IPHC area 2C (southeast), where the charter industry serves a tourist-based, visiting market. In southcentral, where 36% of charter clients are Alaska residents, the impact to the charter sector could be sizable.

Despite an increasing amount of research into Alaska's sport fisheries, most studies have relied on data at too aggregate a level to distinguish activity by species, fishery mode, and community-level geographic scales. Recent work by Hermann et al. (2000) combined with ADF&G logbook data allowed for an economic assessment of the halibut charter sector in Cook Inlet, and this work was incorporated into the Council's halibut GHL analysis (NPFMC 2000). However, logbook data does not provide a measure of effort for non-guided fisheries. Neither are values for resident fishing differentiated into local versus non-local categories. Furthermore, ADF&G's reporting of the Statewide Harvest Survey data does not apportion effort estimates across species, making it difficult to distinguish halibut target trips from saltwater fishing for salmon. While we cannot estimate reliable participation patterns of local residents by community for halibut only fishing trips, data obtained from Herrmann et al. (2000) provides effort levels for all saltwater trips differentiated by residency and mode. Table 5.7 shows the number of angler days spent by different residencies participating in the Cook Inlet saltwater sport fisheries for charter, private boat, and shoreline based fishing. The values are for 1997.

Table 5.7. 1997 Angler Days in Cook Inlet Saltwater Fishery by Residency and Fishery Mode

(Source: Herrmann et al. (2000))

	Charter	Private Boat	Shore	Total
Local	10,100	37,975	16,406	64,481
Alaska Non-Local	26,791	49,857	6,172	82,820
Non-AK	66,129	33,062	13,123	112,314
Total	103,020	120,894	35,701	259,615

Out of a total of 259,615 angler days in the Cook Inlet saltwater fishery for 1997, local residents of the Kenai Peninsula accounted for 64,481. It would be safe to assume that the 16,406 days spent fishing from the shoreline did not target halibut, leaving 48,075 of saltwater angler days taken by local residents, some of which targeted halibut. Table 5.8 lists the associated angler expenditures estimated for local's fishing effort across several expense categories for each fishing mode.

Table 5.8. 1997 Cook Inlet Saltwater Sportfishing Expenditures for Local Residents of the Kenai Peninsula
(Source: Herrmann et al. (2000))

	Shore ($)	Private Boat ($)	Charter ($)
Auto or Truck Fuel	165,500	296,965	78,982
Lodging	66,666	119,621	31,815
Groceries	169,310	303,800	80,800
Restaurant & Bar	227,299	407,852	108,474
Charter & Guide Fees	0	0	1,139,886
Fishing Gear	35,109	270,382	20,200
Fish Processing or Packaging	0	34,937	106,050
Fishing Derby Entry Fees	0	13,671	118,170
Boat Fuel, Lubricants & Repairs	0	603,423	0
Haul Out & Moorage Fees	0	317,471	0

Of particular interest are the fishing related expenditures. Expenses related to food, lodging, and transportation are not likely to change if local anglers substituted subsistence fishing for sportfishing activity. It is not possible to determine how much of the $1.14 million spent on charters went exclusively to halibut only trips, at best, this figure establishes an extreme upper bound on the amount of revenues charter operators on the Kenai might lose if their local clientele opted for other means of reaching the fishing grounds. Certainly, fishing derby fees would also be reduced if fishers did not harvest under the sportfish regulations, and depending on the gear allowed, gear expenses might be redistributed to retailers of commercial gear from tackle shops and related outlets.

5.1.2.2.1 Current Halibut Subsistence Harvests

Tables 2.13 - 2.15 reported non-commercial halibut harvests from Alaskan rural places from Alaska Department of Fish and Game, Division of Subsistence, Community Profile Database. Population numbers in the Community Profile Database are derived from 1995 population estimates as reported by the Alaska Department of Labor, Alaska Population Overview, 1995 Estimates, July 1996. The number of Alaska Natives in a place are estimated by multiplying the 1995 ADOL population by the percent of Alaska Natives in a place as reported in the 1990 U.S. Census.

Rural places are areas outside the boundaries of non-subsistence areas as identified by the Alaska Joint Board of Fisheries and Game. Prior to 1989, the Board identified rural places as places where subsistence (wild food harvest and use) is a principal characteristic of a community's economy and way of life. After 1992, the Board identified "non-subsistence areas" as areas where wild food harvest and use is not a principal characteristic of the area's economy and way of life. The non-subsistence areas identified by the Board are similar to the non-rural areas identified pre-1989. Therefore, you will see that the places called "rural places" in the tables are places which lie outside the boundaries of non-subsistence areas designated by the Alaska Joint Board of Fisheries and Game. The Alaska Board of Fisheries has identified areas with halibut fishing for subsistence or personal use. By and large, coastal areas with halibut stocks which lie outside of the non-subsistence areas are open for subsistence (or personal use) fishing for halibut under state regulation. "Areas with Subsistence Halibut Uses" refer to areas with subsistence or personal halibut uses as identified by the Alaska Board of Fisheries. A rural place (or Alaska Native group) appears in the tables if the Division of Subsistence household surveys indicated that their residents (or members) have an established fishing pattern in coastal districts with halibut stocks.

If the ADF&G Division of Subsistence has no quantitative survey information for a community (mostly communities in District 4E), a community was included if qualitative information indicated that residents used halibut stocks in areas that the Alaska Board of Fisheries has identified as having subsistence(or personal) use of halibut. In the tables, the use pattern of these areas are called "undocumented". Some inland communities (or Alaska Native groups) may have been inadvertently left off the list by this procedure. The Council should consider developing a process for communities or groups inadvertently left off the list to request consideration for future eligibility.

A rural place (or native group) appears in the table if the Division of Subsistence research indicated that their residents (or members) have an established halibut fishing pattern in coastal districts within areas that the Alaska Board of Fisheries has identified as having subsistence(or personal) use of halibut. Table 5.1 includes two groups applying for status -- the Aukquan Traditional Council in Juneau and the Shoonaq' Tribe of Kodiak. There may be other tribal groups also applying for status. Also, there may be other tribal groups using halibut for which no information is available. Like for rural places, the Council should consider developing a process for tribal groups inadvertently left off the list to request consideration for future eligibility.

The estimated number of Alaska Natives per tribal group is estimated by the number of Alaska Natives residing in the place where the tribal government is headquartered (see method above). This is a very rough estimate and over-estimates to some degree the number of Alaska Natives on tribal roles in areas with established halibut uses (because it includes Alaska Natives on membership roles of non-coastal tribes, but who are residing in coastal areas at the time of the U.S. Census). Also, the place of residency of tribal members is not portrayed precisely by the estimate. A tribe's members are commonly spread across several communities, and do not reside only in the place where the tribe is headquartered. The Alaska Natives living in a rural place like Angoon will trace membership to several tribal groups, because of marriages with neighboring tribal members, mobility of tribal members for work and school, and so forth. The best estimate for the number of Alaska Natives per tribal group would derive from each tribe's membership role.

5.1.2.2.2 Projected Halibut Subsistence Harvests under Alternative 2 Suboptions

Suboptions A, B, and C will result in significant differences in number of persons eligible for subsistence halibut fishing and their corresponding resource removals attributed to subsistence. Under Suboption A, 88,863 Alaska Native residents (42,004 Alaska Natives and 46,659 Alaskan non-Native residents) in 118 coastal communities would be eligible. Table 5.9 lists the estimated halibut removals for all non-commercial uses from all gear under the three proposed subsistence definitions, using per capita halibut harvest rates

provided in Table 2.15. Residents are projected to harvest over 1.5 million lb of halibut under Suboption A; however, this estimate includes subsistence, personal use, and recreational harvests. It is not possible to differentiate subsistence harvests from among these sources.

Table 5.10 reports the same information by gear. It may be possible to apply a qualitative assessment from type of use to these harvests. It is expected that under proposed subsistence regulations, reports of "subsistence" halibut harvests would increase in accuracy while total "personal use" and "sport fish" harvests would decline; however, the same amount of fish would actually be harvested.

Table 5.9. Estimates of Population and Non-commercial Halibut Use under Alternative 2

(halibut in pounds, net weight)

Source: Alaska Department of Fish and Game, Alaska Department of Labor

	District 2C	District 3A	District 3B	Districts 4A-D	District 4E	Total
Suboption A. Members of Alaska Native Tribes with Customary and Traditional Uses and Other Rural Residents of Such Native Villages in Areas with Subsistence Halibut Uses						
Number of Rural Places	29	14	10	6	55	114
Number of tribal Entities	19	18	12	6	63	118
Total Population	32,708	19,782	2,321	5,541	28,311	88,663
Number of Alaska Native	13,293	4,586	1,197	1,145	21,783	42,004
Percent Alaska Native	40.6%	23.2%	51.6%	20.7%	76.9%	47.4%
Average Native Per Capita Halibut	19.6	25.6	36.7	106.8	4.3	15.2
Estimated Native Halibut Consumption	260,024	117,256	43,941	122,304	93,288	636,813
Number of Alaska Non-Natives	19,415	15,196	1,124	4,396	6,528	46,659
Percent Alaska Non-Natives	59.4%	76.8%	48.4%	79.3%	23.1%	52.6%
Average Non-Native Per Capita Halibut	30.4	11.2	7.4	28.3	0.0	19.1
Estimated Non-Native Halibut Consumption	591,021	169,592	8,337	124,536	0	893,486
Total Estimated Halibut Consumption	**851,045**	**286,848**	**52,278**	**246,840**	**93,288**	**1,530,299**
Suboption B. Alaska Rural Residents in Areas with Subsistence Halibut Uses						
Number of Rural Places	29	14	10	6	55	114
Total Population	27,221	18,778	2,320	5,541	28,311	82,171
Number of Alaska Native	7,806	3,582	1,196	1,145	21,783	35,512
Percent Alaska Native	28.7%	19.1%	51.6%	20.7%	76.9%	43.2%
Average Native Per Capita Halibut	23.8	27.6	36.7	106.8	4.3	15.3
Estimated Native Halibut Consumption	185,949	99,013	43,941	122,304	93,288	544,495
Number of Alaska Non-Natives	19,415	15,196	1,124	4,396	6,528	46,659
Percent Alaska Non-Natives	71.3%	80.9%	48.4%	79.3%	23.1%	56.8%
Average Non-Native Per Capita Halibut	30.4	11.2	7.4	28.3	0.0	19.1
Estimated Non-Native Halibut Consumption	591,021	169,592	8,337	124,536	0	893,486
Total Estimated Halibut Consumption	**776,970**	**268,605**	**52,278**	**246,840**	**93,288**	**1,437,981**
Suboption C. Members of Alaska Native Tribes with Customary and Traditional Uses and Other Rural Residents of Native Villages Who Have Legitimate Subsistence Needs						
Number of Rural Places	29	14	10	6	55	114
Number of tribal Entities	19	18	12	6	63	118
Total Population	32,708	19,782	2,321	5,541	28,311	88,663
Number of Alaska Native	13,293	4,586	1,197	1,145	21,783	42,004
Percent Alaska Native	40.6%	23.2%	51.6%	20.7%	76.9%	47.4%
Average Native Per Capita Halibut	19.6	25.6	36.7	106.8	4.3	15.2
Estimated Native Halibut Consumption	260,024	117,256	43,941	122,304	93,288	636,813
Number of Alaska Non-Natives	19,415	15,196	1,124	4,396	6,528	46,659
Percent Alaska Non-Natives	59.4%	76.8%	48.4%	79.3%	23.1%	52.6%
Average Non-Native Per Capita Halibut	30.4	11.2	7.4	28.3	0.0	19.1
Estimated Non-Native Halibut Consumption	591,021	169,592	8,337	124,536	0	893,486
Total Estimated Halibut Consumption	**851,045**	**286,848**	**52,278**	**246,840**	**93,288**	**1,530,299**

Table 5.10. Estimates of Population and Non-commercial Halibut Use under Alternative 2

Source: Alaska Department of Fish and Game, Alaska Department of Labor

	District 2C	District 3A	District 3B	Districts 4A-D	District 4E	Total

Suboption A. Members of Alaska Native Tribes with Customary and Traditional Uses and Other Rural Residents of Such Native Villages in Areas with Subsistence Halibut Uses

Number of Alaska Native	13,293	4,586	1,197	1,145	21,783	42,004
Native Harvest-Commercial Gear	43,457	20,685	19,761	24,553	345	108,801
Native Harvest - Other Non-commercial Gear	*	34,349	20,209	85,935	92,587	233,080
Native Harvest - Rod and Reel Gear	216,566	62,221	3,971	11,816	356	294,930
Estimated Native Halibut Consumption	260,024	117,256	43,941	122,304	93,288	636,813
Number of Alaska Non-Natives	19,415	15,196	1,124	4,396	6,528	46,659
Non-Native Harvest-Commercial Gear	69,708	13,942	2,916	12,781	0	99,347
Non-Native Harvest - Other Non-commercial Gear	*	4,795	4,023	5,122	0	13,940
Non-Native Harvest - Rod and Reel Gear	521,312	150,854	1,398	106,633	0	780,197
Estimated Non-Native Halibut Consumption	591,021	169,592	8,337	124,536	0	893,486
Total Population	32,708	19,782	2,321	5,541	28,311	88,663
Total Harvest-Commercial Gear	113,165	34,627	22,677	37,334	345	208,148
Total Harvest - Other Non-commercial Gear	*	39,144	24,232	91,057	92,587	247,020
Total Harvest - Rod and Reel Gear	737,878	213,075	5,369	118,449	356	1,075,127
Total Estimated Halibut Consumption	**851,045**	**286,848**	**52,278**	**246,840**	**93,288**	**1,530,299**

Suboption B. Alaska Rural Residents in Areas with Subsistence Halibut Uses

Number of Alaska Native	7,806	3,582	1,196	1,145	21,783	35,512
Native Harvest-Commercial Gear	40,468	20,423	19,761	24,553	345	105,550
Native Harvest - Other Non-commercial Gear	*	34,349	20,209	85,935	92,587	233,080
Native Harvest - Rod and Reel Gear	145,481	44,240	3,971	11,816	356	205,864
Estimated Native Halibut Consumption	185,949	99,013	43,941	122,304	93,288	544,495
Number of Alaska Non-Natives	19,415	15,196	1,124	4,396	6,528	46,659
Non-Native Harvest-Commercial Gear	69,708	13,942	2,916	12,781	0	99,347
Non-Native Harvest - Other Non-commercial Gear	*	4,795	4,023	5,122	0	13,940
Non-Native Harvest - Rod and Reel Gear	521,312	150,854	1,398	106,633	0	780,197
Estimated Non-Native Halibut Consumption	591,021	169,592	8,337	124,536	0	893,486
Total Population	27,221	18,778	2,320	5,541	28,311	82,171
Total Harvest-Commercial Gear	110,176	34,365	22,677	37,334	345	204,897
Total Harvest - Other Non-commercial Gear	*	39,144	24,232	91,057	92,587	247,020
Total Harvest - Rod and Reel Gear	666,793	195,094	5,369	118,449	356	986,061
Total Estimated Halibut Consumption	**776,970**	**268,605**	**52,278**	**246,840**	**93,288**	**1,437,981**

Suboption C. Members of Alaska Native Tribes with Customary and Traditional Uses and Other Rural Residents of Native Villages Who Have Legitimate Subsistence Needs

Number of Alaska Native	13,293	4,586	1,197	1,145	21,783	42,004
Native Harvest-Commercial Gear	43,457	20,685	19,761	24,553	345	108,801
Native Harvest - Other Non-commercial Gear	*	34,349	20,209	85,935	92,587	233,080
Native Harvest - Rod and Reel Gear	216,566	62,221	3,971	11,816	356	294,930
Estimated Native Halibut Consumption	260,024	117,256	43,941	122,304	93,288	636,813
Number of Alaska Non-Natives	19,415	15,196	1,124	4,396	6,528	46,659
Non-Native Harvest-Commercial Gear	69,708	13,942	2,916	12,781	0	99,347
Non-Native Harvest - Other Non-commercial Gear	*	4,795	4,023	5,122	0	13,940
Non-Native Harvest - Rod and Reel Gear	521,312	150,854	1,398	106,633	0	780,197
Estimated Non-Native Halibut Consumption	591,021	169,592	8,337	124,536	0	893,486
Total Population	32,708	19,782	2,321	5,541	28,311	88,663
Total Harvest-Commercial Gear	113,165	34,627	22,677	37,334	345	208,148
Total Harvest - Other Non-commercial Gear	*	39,144	24,232	91,057	92,587	247,020
Total Harvest - Rod and Reel Gear	737,878	213,075	5,369	118,449	356	1,075,127
Total Estimated Halibut Consumption	**851,045**	**286,848**	**52,278**	**246,840**	**93,288**	**1,530,299**

* In 2C, household surveys did not ask about "other non-commercial gear"

Under Suboption B, all rural residents of Alaskan coastal communities identified with halibut subsistence uses would qualify for subsistence halibut fishing. Under Suboption B, 82,171 persons in 114 rural places are eligible (35,512 Alaska Natives and 46,659 Alaskan non-Native residents). Those residents are projected to harvest over 3.3 million lb of halibut for non-commercial purposes. As it is currently proposed, a total of 6,367 fewer Alaska Natives and four rural communities would be excluded from proposed subsistence regulations. In Area 2C, Suboption B excludes 5,487 14,052 Tlingit-Haida-Tsimshian tribal members Juneau and Ketchikan. In Area 3A it excludes 1,004 Kenaitze tribal members residing in the Kenai-Soldotna-Ninilchik area. In Area 3B, 5 members and two communities are excluded.

The most inclusive standard occurs under Suboption C, which includes Alaska Natives and other rural residents in areas with established halibut uses (the Migratory Bird Treaty protocol language allows for reducing the number of non-Natives in rural areas through some additional individually-based eligibility criteria -- dependency on subsistence; these additional potential individual criterion have not been applied here). Under Suboption C, between 42,003 and 88,633 persons in 114 rural places and 118 Alaska Native groups are eligible (including 42,003 Alaska Natives and 46,630 non-Natives). Those residents are projected to harvest over 1.5 million lb of halibut.

For all gear types, Alaska Native and non-Native non-commercial per capita halibut harvests are very similar (43.3 and 37.3 lb, respectively). The Council must decide whether non-Native needs for halibut for consumption are met by the 2-fish per person per day sport bag limit. Then, the Council and NMFS would need to develop a protocol for non-Native eligibility, application criteria, appeals board, etc.

5.1.2.3 Option 3. Define legal gear.

Suboption A. Define hand held gear as:
1. Rod and reel gear
2. Spear
3. Hand troll gear

Suboption B. Define hook-and-line gear (including set and hand-held gear) with a range of:
1. 2 hooks;
2. 10 hooks;
3. 30 hooks;
4. 60 hooks.

Suboption C. Allow tribal governments to contract with NMFS to allow proxies to be used by designated fishermen to fish for the community using:
1. 1 - 3 skates of gear, up to 60 hooks each;
2. any gear type

Suboption D. Allow retention of subsistence halibut using commercial gear while IFQ/CDQ fishing.
1. Statewide
2. 4C, 4D, and 4E only
3. Require subsistence fishermen to designate a particular trip as a subsistence trip outside of areas 4C, 4D, and 4E

Option 3 would define legal halibut subsistence gear. The Council may choose any or all of the suboptions as legal subsistence gear. The Council should consider foremost that 'true' subsistence fishing, that is fishing to feed families, should remain at current per capita levels regardless of the allowed gear. If halibut are truly to be harvested to feed families, those rates of consumption should not increase measurably due to harvesting efficiency. Whether the physical costs of harvesting halibut arise from rod and reel gear with two hooks or a longline skate with 60 hooks, an individual can consume only a certain amount of halibut. Removals are likely to increase, however, if the Council allows trade of these fish. This increase would come at the expense of reduced commercial and sport harvests. Trade is considered under Option 5. An option to allow the sale of subsistence halibut was eliminated from the analysis in 1997.

Suboption A would legalize gear that has been reported through public testimony to be used for subsistence halibut fishing. It would include rod-and-reel gear (with up to three hooks) that is widely used in rural

coastal communities for taking halibut for family use. Halibut are taken more occasionally as an incidental harvest with hand troll gear operated for subsistence salmon fishing. The use of spears for taking flounders and halibut is relatively uncommon, though it is used in shallow bays in places like Mekoryak on Nunivak Island. State regulations allow up to three hooks per line. The Council may wish to define the number of legally allowed hooks with rod-and-reel gear and troll gear.

The halibut harvest with rod and reel by Alaska Native households and by rural communities is listed in Table 5.10. Under current regulations, it is legal for anyone in rural areas to fish with rod and reel, using two hooks, and taking two fish per day. So, given these current regulations, what should the theoretical maximum harvest be, and how does it compare with actual harvests? The model assumes that there is one fisher per household of four people. Each fisher fishes for 30 days (although the theoretical maximum is much more than that), taking 2 fish per day, weighing 30 lb each.

The predicted maximum harvest with rod and reel under the model's assumptions is 18.8 million lb under suboption A (Alaska Natives) and 37 million lb under suboption B (rural places) (Tables 5.11 and 5.12). How does this compare with the actual known harvest? Based on household survey data, the actual observed harvest by Alaska Natives with rod and reel under current regulations is only 298,796 lb (not 18.8 million lb predicted by the model) and the actual observed harvest by residents of rural communities with rod and reel is only 1.1 million lb (not 37 million lb predicted by the model). The model's estimates are off by astronomical factors of 6,300% for Suboption A and by a factor of 3,400% for Suboption B. The two hook model is included in the analysis to illustrate the inaccuracies of this type of modeling for predicting the way that subsistence production actually takes place.

Another model assumes potential consumption capacity in rural communities rather than assumed potential production capacity (recognizing that subsistence production is production for use values as food in small populations). In this second model, it is assumed that households under potential multiple-hook subsistence halibut regulations start fishing halibut to the exclusion of all other subsistence fish species currently harvested and consumed; that is, families replace all the subsistence fish currently in their diet solely with halibut, because it is so efficient to catch. While this may be an extreme assumption, this would reflect a very high estimate of a theoretical maximum harvest for halibut, in that halibut would replace pound for pound all the subsistence salmon, cod, herring, smelt, and other fish species in the diet of Alaska Native and other rural residents. As shown in Table 5.12, the theoretical maximum take is 3.5 million lbs for Suboption A, 7.4 million lbs for suboption B, and 8.0 million lbs for Suboption C. Again, this model does not represent what will actually take place if multiple hooks are recognized as legal gear in villages, but this theoretical maximum based on potential consumption capacity better reflects anticipated removals under the different eligibility and gear options.

Table 5.11 Estimates of Theoretical Maximum Halibut Removals under Current 2-Fish per Day Limit						
	Area 2C	Area 3A	Area 3B	Area 4A-D	Area 4E	Total
Theoretical Maximum Harvest (2 fish per day, 30 lbs per fish)						
Suboption A						
Eligible Users	32,708	19,782	2,321	5,541	28,311	88,663
Households Fishing	8,177	4,946	580	1,385	7,078	22,166
Catch per day	490,620	296,730	34,815	83,115	424,665	1,329,945
Catch per 30 days	14,718,600	8,901,900	1,044,450	2,493,450	12,739,950	39,898,350
Suboption B						
Eligible Users	27,221	18,778	2,320	5,541	28,311	82,171
Households Fishing	6,805	4,695	580	1,385	7,078	20,543
Catch per day	408,315	281,670	34,800	83,115	424,665	1,232,565
Catch per 30 days	12,249,450	8,450,100	1,044,000	2,493,450	12,739,950	36,976,950
Suboption C						
Eligible Users	32,708	19,782	2,321	5,541	28,311	88,663
Households Fishing	8,177	4,946	580	1,385	7,078	22,166
Catch per day	490,620	296,730	34,815	83,115	424,665	1,329,945
Catch per 30 days	14,718,600	8,901,900	1,044,450	2,493,450	12,739,950	39,898,350
Documented Harvest by Rod and Reel Under Current Regulations						
Suboption A	737,878	213,075	5,369	118,449	356	1,075,127
Suboption B	666,793	195,094	5,369	118,449	356	986,061
Suboption C	737,878	213,075	5,369	118,449	356	1,075,127
Percent Overestimate by Model						
Suboption A	1995%	4178%	19453%	2105%	3578638%	3711%
Suboption B	1837%	4331%	19445%	2105%	3578638%	3750%
Suboption C	1995%	4178%	19453%	2105%	3578638%	3711%
Table 5.12 Estimates of Theoretical Maximum Halibut Removals under Multiple Hooks						
If Halibut Replaced All Other Subsistence Fish Consumed (Salmon, Cod, etc.)						
Suboption A	Area 2C	Area 3A	Area 3B	Area 4A-D	Area 4E*	Total
Eligible Users	32,708	19,782	2,321	5,541	28,311	88,663
Total Per Capita Fish Consumption	96	94	211	218	400	203
Theoretical Maximum Halibut	3,139,968	1,859,508	489,731	1,207,938	11,324,400	18,021,545
Suboption B						
Eligible Users	27,221	18,778	2,320	5,541	28,311	82,171
Total Per Capita Fish Consumption	96	94	211	218	400	212
Theoretical Maximum Halibut	2,613,216	1,765,132	489,520	1,207,938	11,324,400	17,400,206

The reason for the smaller actual subsistence harvests, even given relatively unrestricted fishing days and gear, is as follows. In small villages, regulations allowing for more efficient gear for taking halibut (such as 30-hook skates) is not likely to measurably increase the total use of halibut in those places. As a prediction, subsistence halibut harvesting may become more efficient for some households, the types of gear used may shift somewhat between rod-and-reel, set hooks, and retention from commercial catches, but the total number of halibut harvested and used in a community are likely to be similar to the range of harvests under previous management regimes. This is because total use levels of halibut are constrained by the consumption needs of families in small communities. Families quit subsistence fishing when their food requirements for a species are met (and collectively, when the food requirements of a rural community are met). Subsistence food use levels are self-limiting, and for species like halibut, use levels magnitudes below a household's harvest potential, as shown by the rod and reel exercise. This is the central point in analyzing potential effects of regulation changes regarding gear -- because subsistence harvests are for use values in a limited community of consuming families, changes in halibut gear are not by themselves likely to measurably increase the use of halibut in small communities.

The pattern of subsistence food production in a village shows how this occurs in practice at the household level. First, a large percentage of households in a village do not harvest their own wild foods, but receive it from others. Any model is incorrect if it assumes that most households will use a new gear type. Table 5.13 shows the percent of households using, trying to harvest, harvesting, receiving, or giving non-commercial halibut, by community and year. In a village like Kake, where halibut is an important subsistence food source, only about half the households report harvesting halibut during a yearly survey period under the current management regime. This is likely to stay the same even though gear regulations are changed. Elderly households, households with single mothers and children, households of young couples without boats, and other non-fishing households prior to the regulation change will continue to be non-fishing households.

Second, most household who do fish for halibut will not be using a skate with 30 hooks -- they will be using gear with fewer hooks. It stands to reason that a theoretical household of four members fishing only for their own consumption will not be putting in a 30-hook skate for 30 days a year -- what would they possibly do with all the halibut? It would be impossible for that household to consume. The majority of households who currently subsistence fish for halibut will continue to fish for a few days a year with smaller amounts of gear, and quit once their household needs for halibut are met.

Third, household surveys by the Division of Subsistence demonstrate that there is specialization in subsistence harvests. A relatively small subset of households in a village commonly assume the responsibility for harvesting extra fish which are distributed to other households in the village or tribal group through sharing, barter, or trade. This extra fish goes to households who want to eat halibut but are not able to produce it themselves (cf, Robert J. Wolfe, The Superhousehold: Specialization in Subsistence Economies, Division of Subsistence, Alaska Department of Fish and Game, Juneau, Alaska.) It is this relatively small subset of households that likely will use skates with multiple hooks to efficiently take this extra harvest to feed people outside their own household. Even this set of households using skates will set only a few days a year, and will stop harvesting once the needs of the households they are supplying are met. The regulation allowing for multiple hooks is designed to provide for this established pattern of wild food production in a community.

There is an important exception to this prediction about relatively stable harvest levels -- potential harvests in mid-sized towns with a mix of cultural traditions, such as Kodiak City, Unalaska, Sitka, Petersburg, and Cordova. In these places, there currently is a great mix of fishing traditions, with substantial proportions of

Table 5.13 Percent of Households Using, Trying to Harvest, Harvesting, Receiving, or Giving Non-Commercial Halibut, by Community and Year
Source: ADF&G Division of Subsistence Household Surveys

Community	Survey Year	Using	Trying	Harvesting	Receiving	Giving
Akhiok	82	81.00		81.00		
Akhiok	86	33.30	25.00	25.00	8.30	25.00
Akhiok	89	100.00	70.00	70.00	60.00	70.00
Akhiok	92	75.00	50.00	45.80	41.70	33.30
Akutan	90	100.00	80.00	80.00	76.00	64.00
Aleknagik	89	5.30	2.60	0.00	5.30	2.60
Angoon	84	84.20	81.60	81.60	26.30	39.50
Angoon	87	85.40		53.70	61.70	42.30
Atka	94	85.70	57.10	53.60	71.40	42.90
Chenega Bay	84	87.50	75.00	43.80	81.30	62.50
Chenega Bay	85	93.80	81.30	68.80	75.00	62.50
Chenega Bay	89	55.60	38.90	33.30	38.90	33.30
Chenega Bay	90	77.80	33.30	33.30	66.70	11.10
Chenega Bay	91	94.40	61.10	61.10	61.10	50.00
Chenega Bay	92	91.30	47.80	47.80	78.30	56.50
Chenega Bay	93	91.30	56.50	52.20	78.30	60.90
Chignik Bay	84	84.20	68.40	68.40	63.20	57.90
Chignik Bay	89	88.60	71.40	68.60	45.70	45.70
Chignik Bay	91	90.00	66.70	56.70	43.30	43.30
Chignik Lagoon	84	76.50	52.90	52.90	35.30	23.50
Chignik Lagoon	89	100.00	66.70	66.70	53.30	40.00
Chignik Lake	84	95.70	65.20	60.90	52.20	47.80
Chignik Lake	89	66.70	57.10	57.10	42.90	19.00
Chignik Lake	91	91.70	62.50	62.50	66.70	50.00
Clark's Point	89	0.00	0.00	0.00	0.00	0.00
Coffman Cove	87	55.00		42.60	27.80	35.10
Cordova	85	15.50	46.60	36.40	51.00	31.60
Cordova	88	87.20	63.90	54.80	47.20	49.30
Cordova	91	87.10	58.40	52.50	52.50	46.50
Cordova	92	90.20	65.90	63.40	51.20	56.10
Cordova	93	94.20	57.70	49.00	68.30	41.30
Craig	87	68.10		35.30	48.80	22.40
Dillingham	84		0.00	0.00		
Edna Bay	87	100.00		95.00	80.00	80.00
Egegik	84	12.00	4.00	4.00	8.00	8.00
Elfin Cove	87	92.30		76.90	69.20	53.80
False Pass	88	80.00	65.00	65.00	60.00	60.00
Gustavus	87	90.00		76.00	41.80	66.40
Haines	83	52.40	38.80	31.30	23.10	11.60
Haines	87	74.20		40.80	52.10	21.90
Hoonah	85	85.90	38.00	39.40	66.20	21.10
Hoonah	87	87.40		62.10	57.10	44.40
Hydaburg	87	88.10		31.30	80.60	25.30
Hyder	87	57.60		21.20	48.50	15.20
Igiugig	83		0.00	0.00	0.00	
Igiugig	92	50.00	0.00	0.00	50.00	0.00
Community	Survey Year	Using	Trying	Harvesting	Receiving	Giving
Iliamna	83		0.00	0.00	5.00	
Iliamna	91	39.10	8.70	8.70	30.40	4.30
Ivanof Bay	84	66.70	33.30	33.30	33.30	33.30

Ivanof Bay	89	100.00	85.70	85.70	71.40	71.40
Kake	85	75.70	34.30	44.30	35.70	25.70
Kake	87	88.40		54.10	63.00	23.10
Karluk	82	90.00		50.00		
Karluk	86	78.90	31.60	31.60	47.40	21.10
Karluk	89	64.30	50.00	50.00	35.70	35.70
Karluk	90	82.40	52.90	52.90	64.70	47.10
Karluk	91	92.30	69.20	61.50	76.90	46.20
Kasaan	87	71.40		42.90	50.00	35.70
King Cove	92	73.30	38.70	36.00	46.70	22.70
Klawock	84	69.40	38.90	33.30	47.20	19.40
Klawock	87	77.40		52.20	47.00	28.50
Klukwan	83	30.30	21.20	15.20	15.20	3.00
Klukwan	87	50.30		7.10	50.30	0.00
Kodiak City	91	89.00	54.00	48.00	61.00	43.00
Kodiak City	92	86.00	55.00	52.00	63.00	47.00
Kodiak City	93	85.70	58.10	50.50	61.00	54.30
Kokhanok	83		0.00	0.00	0.00	
Kokhanok	92	11.10	5.60	5.60	11.10	5.60
Larsen Bay	82	84.40		46.90		
Larsen Bay	86	81.10	35.10	32.40	67.60	18.90
Larsen Bay	89	94.10	52.90	52.90	52.90	41.20
Larsen Bay	90	85.70	54.30	54.30	65.70	51.40
Larsen Bay	91	89.50	55.30	55.30	60.50	47.40
Larsen Bay	92	83.80	62.20	56.80	56.80	54.10
Larsen Bay	93	82.50	50.00	50.00	62.50	47.50
Levelock	88	7.40	3.70	3.70	7.40	3.70
Levelock	92	0.00	0.00	0.00	0.00	0.00
Metlakatla	87	80.40		21.90	68.20	10.20
Meyers Chuck	87	80.00		70.00	50.00	50.00
Nanwalek	87	87.90	60.60	57.60	63.60	45.50
Nanwalek	89	30.30	27.30	18.20	18.20	15.20
Nanwalek	90	77.10	57.10	51.40	60.00	37.10
Nanwalek	91	93.10	65.50	55.20	69.00	48.30
Nanwalek	92	100.00	78.10	78.10	71.90	65.60
Nanwalek	93	100.00	72.70	72.70	84.80	78.80
Nelson Lagoon	87		0.00	0.00		0.00
Newhalen	91	11.50	0.00	0.00	11.50	3.80
Nikolski	90	100.00	71.40	71.40	71.40	64.30
Old Harbor	82	88.30		80.50		
Old Harbor	86	84.10	56.80	54.50	56.80	38.60
Old Harbor	89	81.30	54.20	54.20	58.30	39.60
Old Harbor	91	95.20	71.40	69.00	69.00	66.70
Ouzinkie	82	90.60		59.40		
Ouzinkie	86	85.30	61.80	55.90	52.90	32.40
Ouzinkie	89	48.60	31.40	28.60	34.30	17.10
Ouzinkie	90	77.40	39.60	39.60	52.80	32.10
Ouzinkie	91	93.80	62.50	53.10	65.60	40.60
Community	Survey Year	Using	Trying	Harvesting	Receiving	Giving
Ouzinkie	92	84.60	57.70	53.80	59.60	59.60
Ouzinkie	93	83.60	54.10	50.80	60.70	47.50
Pedro Bay	82		5.90	5.90	0.00	
Pelican	87	97.20		75.40	69.80	59.60

Perryville	84	80.00	40.00	40.00	65.00	45.00
Perryville	89	96.30	48.10	40.70	77.80	29.60
Petersburg	87	81.40		63.50	35.80	47.30
Pilot Point	87	29.40	23.50	23.50	5.90	5.90
Point Baker	87	84.20		63.20	63.20	42.10
Port Alexander	87	91.30		64.80	73.50	43.70
Port Alsworth	83		0.00	0.00	0.00	
Port Graham	87	90.70	74.10	66.70	59.30	40.70
Port Graham	89	62.50	52.10	47.90	35.40	18.80
Port Graham	90	89.10	67.40	58.70	47.80	50.00
Port Graham	91	95.90	65.30	61.20	73.50	57.10
Port Graham	92	91.70	72.90	70.80	64.60	60.40
Port Graham	93	96.10	68.60	60.80	64.70	60.80
Port Heiden	87	21.60	8.10	8.10	13.50	2.70
Port Lions	82	96.40		67.30		
Port Lions	86	95.40	63.10	60.00	63.10	44.60
Port Lions	89	83.30	52.80	50.00	44.40	25.00
Port Lions	93	93.30	66.70	66.70	64.40	42.20
Port Protection	87	96.00		68.00	72.00	52.00
Saint George	94	100.00	55.60	47.20	69.40	25.00
Saint Paul	94	90.50	56.00	54.80	60.70	48.80
Sand Point	92	89.40	60.60	59.60	47.10	32.70
Saxman	87	67.90		34.00	47.20	12.70
Seldovia	82	97.10		34.30	62.90	
Seldovia	91	89.40	63.60	62.10	48.50	40.90
Seldovia	92	86.20	58.50	53.80	52.30	43.10
Seldovia	93	84.60	58.50	56.90	50.80	44.60
Sitka	87	46.60		46.60	0.00	0.00
Skagway	87	69.70		21.20	58.40	6.20
South Naknek	92	54.30	11.40	11.40	45.70	14.30
Tatitlek	87	94.70	57.90	52.60	78.90	52.60
Tatitlek	88	85.70	57.10	42.90	66.70	42.90
Tatitlek	89	68.20	36.40	31.80	40.90	27.30
Tatitlek	90	64.70	29.40	29.40	41.20	41.20
Tatitlek	91	100.00	47.40	47.40	84.20	52.60
Tatitlek	93	90.00	50.00	35.00	65.00	55.00
Tenakee Springs	84	91.70	54.20	54.20	70.80	33.30
Tenakee Springs	87	90.30		58.00	54.90	41.90
Thorne Bay	87	74.30		58.30	39.50	25.30
Tununak	86	100.00	97.00	93.90	15.20	57.60
Ugashik	87	0.00	0.00	0.00	0.00	0.00
Unalaska	94	90.80	56.80	55.80	62.50	51.20
Whale Pass	87	77.80		55.60	33.30	27.80
Wrangell	87	76.60		47.30	54.10	30.20
Yakutat	84	92.00	58.00	58.00	58.00	40.00
Yakutat	87	87.60		53.60	61.90	37.60

halibut being taken for sport values and some portion of halibut being taken for subsistence values. These places experience significant seasonal increases of non-residents for commercial fish catching-processing and guided- and unguided-recreational fishing. There are also fewer constraints on capital formation (gear upgrading) in mid-sized towns, where the wage sectors are more developed in comparison with small villages. In these few mid-sized towns, regulations allowing for multiple hooks likely would result in measurable increases in total halibut harvests, as some households who previously fished for recreational

values try a hand at newly-authorized subsistence fishing with newly-purchased gear, and where some significant portion of the halibut taken locally is exported from the community with seasonal migrants. Keeping a two-hook, two fish per day regulation may be warranted around mid-sized towns like Kodiak City, Unalaska, Sitka, Petersburg, and Cordova, if the intent of the Council is to provide for established subsistence patterns while not stimulating the creation of unusual new patterns of fishing for halibut. A process for the creation of fishery area management plans around mid-sized towns may be a preferred method under Option 3. Appropriate gear types to accommodate established subsistence patterns can be identified in the local management plans specific to areas around those places.

Suboption B would allow the use of hook-and-line gear (including set and hand-held gear) with a range of 10 hooks, 30 hooks, and 60 hooks. An individual would be limited to one skate of gear up to 1,800 ft long (not including the buoy line), with hooks set 18-20 ft apart, with a legibly marked buoy. **Should the Council select Suboption B as part of its preferred, it is also requested to state its intent under Suboption B to either (1) limit a fisherman to one skate of gear with a limit between 2 and 60 hooks in total; or (2) allow a fisherman to have more than one skate of gear, which in total are limited to between 2 and 60 hooks. At 18-20 ft apart, a 60 hook limit is equivalent to about 1800 ft of ground line in aggregate. Requirements for marking gear should also be specified.**

Suboption C would allow designated fishermen to use either 1-3 skates of longline gear, with up to 60 hooks, or any gear type. This suboption would require individual or community agreements with NMFS. Suboption C would apply to co-management agreements between NMFS and tribal governments under either Alternative 2, Option 2, Suboptions A, C, D, and E. Since longline skate gear is more clearly identified as a customary and traditional gear of some Southeast tribes, the Council may wish to confine such a gear allowance to Alaska Natives in those communities (e.g., Gulf of Alaska only, Area 2C only, Alaska Native only).

ADF&G Subsistence Division studies indicate that not all rural residents actually harvest subsistence food, but is in fact harvested by a minority of the rural population (Wolfe and Bosworth 1990). Suboption C would allow 'designated' fishermen to fish halibut for his community using any gear type or up to 3 skates, with up to 60 hooks per skate. This would be modeled after the designated hunter allowance. This option would require NMFS to develop a process to approve, monitor, and enforce individual agreements with either tribes, communities, or individual rural residents for harvesting halibut for others. The State has a 'proxy' system of subsistence fishing for others that may serve as a model. **Requirements for marking gear should also be specified.**

Suboption D was added to the analysis in December 1999 in response to public testimony. It was further modified in April 2000. It expands the current exemption for Area 4E CDQ halibut fishermen to all halibut fisherman in all IPHC areas (Item 1) or just to Areas 4C-E (Item 2). This suboption addresses wastage issues, i.e., the legal requirement to discard halibut less than 32 inches while commercial fishing. This practice, though required by law, is contrary with the cultural beliefs of some Alaska Native tribes in Western Alaska. Item 3 would require subsistence fishermen to designate a particular trip as a subsistence trip outside of areas 4C, 4D, and 4E. If a trip is designated "subsistence," it would be the Council's intent that undersize fish could be retained only on such a trip. A call-in procedure would need to be designed with NMFS Enforcement and the Coast Guard.

An examination of NMFS RAM data for halibut IFQ and CDQ holders indicate that a maximum of 2,148 persons who hold halibut commercial QS may also be deemed eligible for halibut subsistence under Suboption A (Table 5.14). Since the database does not identify the QS holder by race, the exact number of potential QS holders who may also be deemed eligible is unknown. Further, the number of eligible persons who hold QS who would take home halibut for subsistence while commercial fishing is also unknown.

Under Suboption B, 1,418 persons were identified who both hold commercial QS and live in rural places that have halibut C&T findings (Table 5.15). Again, the number of eligible persons who hold QS who would take home halibut for subsistence while commercial fishing is also unknown. Table 5.16 lists the number of QS holders by area to allow the Council to choose to allow retention of QS holders to retain subsistence halibut by area (if they are deemed eligible under Option 2).

The Council requested a review of IPHC findings on the continued requirement of the 32-inch minimum size for halibut in the commercial fishery to evaluate whether one way to conform subsistence and commercial fishing would be to not have a minimum size in either halibut fishery. Approximately 1.2 M lb in 1998 and 1.0 M lb in 1999 of undersized halibut were discarded in the Alaska commercial fishery in 1998. IPHC staff reevaluated the minimum size in 1995 (Clark and Parma 1995) and 1997 (Parma 1997). In 1999, Parma also evaluated a maximum size for the commercial fishery. Summaries from those studies follow.

> The 32'' size limit was adopted in 1973 in order to increase yields when halibut growth rates were highest. Now that the growth rates have declined again, average yield per recruit could actually increase somewhat if the minimum size limit were lowered. As we discussed last year, however, potential increases in yield appear small compared to reproductive losses that would occur if the commercial selectivity shifted toward smaller fish in response to a drop in the size limit (Parma 1998[sic]). In other words, the current minimum size limit discourages the fleet from targeting smaller fish, reducing the possibility that too many fish are caught before they have a chance to reproduce (from Parma 1999).
>
> The effects of the commercial size limit on expected yield per recruit and female spawning biomass per recruit were evaluated. Intrinsic growth parameters for female and male halibut, and size-specific selectivity of the commercial fishery were estimated independently for Areas 2B and 3A by fitting a sex-specific, age-structured population model to data from the setline surveys and the commercial fishery for the period 1974-1996. Area-specific schedules of female maturity at age were estimated using information collected in the summer research surveys of 1995 and 1996. Yield per recruit and spawning biomass per recruit for Area 3A were little affected when the commercial legal size was dropped from 81 cm (approximately the current value) to 60 cm, and commercial selectivity at length was fixed at the values estimated for 1996. In Area 2B, a decrease in the legal size would result in a small increase in yield per recruit and a small decrease in spawning biomass per recruit. Lowering the size limit would bring about a substantial reduction in spawning biomass per recruit in both areas if such a drop were followed by a shift in commercial selectivity towards smaller fish sizes. The current size limit of 32 inches is thus considered to be appropriate as the potential gains derived from lowering it are small compared to the associated potential reproductive losses (from Parma 1997).

Table 5.14. Persons Making IFQ Sablefish/Halibut; or CDQ Halibut Landings in 1999 who live in anywhere in the State[2,3,4].

Residence	Count	Residence	Count
UNIDENTIFIED[1]	21	MEKORYUK	28
AKUTAN	3	METLAKATLA	8
ANCHOR POINT	28	MEYERS CHUCK	3
ANCHORAGE	58	NAKNEK	4
ANGOON	22	NEWTOK	8
ATKA	6	NIGHTMUTE	13
AUKE BAY	18	NIKISKI	7
CENTRAL	1	NIKOLAEVSK	8
CHEFORNAK	9	NINILCHIK	9
CHIGNIK	2	NOME	7
CHIGNIK BAY	1	NORTH POLE	2
CHIGNIK LAGOON	4	OLD HARBOR	5
CHUGIAK	2	OUZINKIE	13
CLAM GULCH	6	PALMER	8
COPPER CENTER	2	PAXSON	1
CORDOVA	50	PELICAN	17
CRAIG	45	PERRYVILLE	1
DILLINGHAM	7	PETERSBURG	212
DOUGLAS	27	PILOT POINT	1
DUTCH HARBOR	6	PITKUS POINT	1
EAGLE RIVER	12	POINT BAKER	10
EDNA BAY	4	PORT ALEXANDER	16
EGEGIK	2	PORT GRAHAM	1
ELFIN COVE	6	PORT LIONS	6
FAIRBANKS	7	PORT PROTECTION	1
FALSE PASS	2	SAND POINT	46
FRITZ CREEK	2	SAVOONGA	2
GIRDWOOD	7	SELDOVIA	16
GUSTAVUS	8	SEWARD	33
HAINES	47	SITKA	222
HALIBUT COVE	2	SKAGWAY	1
HOMER	174	SOLDOTNA	31
HOONAH	25	ST GEORGE ISLAND	12
HYDABURG	6	ST PAUL ISLAND	30
HYDER	1	STERLING	5
IVANOF BAY	1	TENAKEE	3
JUNEAU	103	THORNE BAY	4
KAKE	18	TOKSOOK BAY	36
KASILOF	11	TUNUNAK	23
KENAI	36	UNALASKA	11
KETCHIKAN	65	VALDEZ	10
KING COVE	15	WARD COVE	8
KIPNUK	12	WASILLA	14
KLAWOCK	3	WHITTIER	2
KODIAK	238	WILLOW	3
KWIGILLINGOK	1	WRANGELL	90
MANOKOTAK	1	YAKUTAT	29
		Total	**2,148**

[1]includes all U.S.[2]includes QS, permitholders and hired skippers making landings on IFQ/CDQ cards
[3]adresses were self-reported, as used in 1999 [4]RAM database does not record race, so data likely overestimate affected parties
Source: Jesse Gharrett, NMFS RAM Division, 4/5/00

Table 5.15. Persons Making IFQ Sablefish/Halibut; or CDQ Halibut Landings in 1999 who live in rural places associated with Alaska Native Tribes with halibut C&T.

Residence	Count	Residence	Count
AKUTAN	3	NAKNEK	4
ANGOON	22	NEWTOK	8
ATKA	6	NIGHTMUTE	13
CHEFORNAK	9	NOME	7
CHIGNIK	2	OLD HARBOR	5
CHIGNIK BAY	1	OUZINKIE	13
CHIGNIK LAGOON	4	PELICAN	17
CORDOVA	50	PERRYVILLE	1
CRAIG	45	PETERSBURG	212
DILLINGHAM	7	PILOT POINT	1
EDNA BAY	4	POINT BAKER	10
EGEGIK	2	PORT ALEXANDER	16
ELFIN COVE	6	PORT GRAHAM	1
FALSE PASS	2	PORT LIONS	6
GUSTAVUS	8	PORT PROTECTION	1
HAINES	47	SAND POINT	46
HOONAH	25	SAVOONGA	2
HYDABURG	6	SELDOVIA	16
HYDER	1	SITKA	222
IVANOF BAY	1	SKAGWAY	1
KAKE	18	ST GEORGE ISLAND	12
KING COVE	15	ST PAUL ISLAND	30
KIPNUK	12	TENAKEE	3
KLAWOCK	3	THORNE BAY	4
KODIAK	238	TOKSOOK BAY	36
KWIGILLINGOK	1	TUNUNAK	23
MANOKOTAK	1	UNALASKA	11
MEKORYUK	28	WRANGELL	90
METLAKATLA	8	YAKUTAT	29
MEYERS CHUCK	3	**Total**	**1,418**

*includes QS, permitholders and hired skippers making landings on IFQ/CDQ cards
**addresses were self-reported, as used in 1999
Source: Jesse Gharrett, NMFS RAM Division, 4/5/00

Table 5.16. Persons Making IFQ Sablefish/Halibut; or CDQ Halibut Landings in 1999 by cardholder state and city

Area	Residence	Count
2C	ANCHORAGE	5
2C	ANGOON	22
2C	AUKE BAY	15
2C	CRAIG	45
2C	DOUGLAS	26
2C	EDNA BAY	4
2C	ELFIN COVE	6
2C	FAIRBANKS	3
2C	GUSTAVUS	7
2C	HAINES	46
2C	HOMER	2
2C	HOONAH	23
2C	HYDABURG	6
2C	HYDER	1
2C	JUNEAU	92
2C	KAKE	18
2C	KETCHIKAN	62
2C	KLAWOCK	3
2C	METLAKATLA	8
2C	MEYERS CHUCK	3
2C	NORTH POLE	1
2C	PALMER	2
2C	PELICAN	16
2C	PETERSBURG	190
2C	POINT BAKER	10
2C	PORT ALEXANDER	16
2C	PORT PROTECTION	1
2C	SEWARD	2
2C	SITKA	201
2C	SKAGWAY	1
2C	TENAKEE	2
2C	THORNE BAY	4
2C	UNALASKA	1
2C	WARD COVE	8
2C	WASILLA	1
2C	WRANGELL	88
	Total 2C	941

Area	Residence	Count
3A	unidentified	2
3A	ANCHOR POINT	26
3A	ANCHORAGE	49
3A	ATKA	1
3A	AUKE BAY	7
3A	CENTRAL	1
3A	CHUGIAK	2
3A	CLAM GULCH	6
3A	COPPER CENTER	2
3A	CORDOVA	50
3A	CRAIG	1
3A	DOUGLAS	13
3A	DUTCH HARBOR	2
3A	EAGLE RIVER	11
3A	ELFIN COVE	2
3A	FAIRBANKS	2
3A	FRITZ CREEK	2
3A	GIRDWOOD	7
3A	GUSTAVUS	3
3A	HAINES	11
3A	HALIBUT COVE	2
3A	HOMER	156
3A	HOONAH	11
3A	JUNEAU	41
3A	KAKE	1
3A	KASILOF	11
3A	KENAI	36
3A	KETCHIKAN	8
3A	KODIAK	212
3A	MEKORYUK	1
3A	NIKISKI	7
3A	NIKOLAEVSK	8
3A	NINILCHIK	9
3A	NORTH POLE	1
3A	OLD HARBOR	5
3A	OUZINKIE	13
3A	PALMER	5
3A	PAXSON	1
3A	PELICAN	9
3A	PETERSBURG	53
3A	PITKUS POINT	1
3A	PORT ALEXANDER	2
3A	PORT GRAHAM	1

Area	Residence	Count
3A	PORT LIONS	6
3A	SELDOVIA	16
3A	SEWARD	31
3A	SITKA	78
3A	SOLDOTNA	31
3A	STERLING	5
3A	TENAKEE	1
3A	VALDEZ	10
3A	WASILLA	13
3A	WHITTIER	2
3A	WILLOW	3
3A	WRANGELL	5
3A	YAKUTAT	29
	Total 3A	794

(cont.)

Area	Residence	Count
3B	unidentified	2
3B	ANCHOR POINT	7
3B	ANCHORAGE	11
3B	CENTRAL	1
3B	CHIGNIK	2
3B	CHIGNIK BAY	1
3B	C H I G N I K LAGOON	4
3B	CHUGIAK	1
3B	COPPER CENTER	1
3B	DOUGLAS	1
3B	DUTCH HARBOR	2
3B	EAGLE RIVER	1
3B	FAIRBANKS	2
3B	FALSE PASS	2
3B	HOMER	62
3B	IVANOF BAY	1
3B	JUNEAU	2
3B	KENAI	1
3B	KING COVE	15
3B	KODIAK	113
3B	NIKOLAEVSK	3
3B	NINILCHIK	1
3B	OUZINKIE	1
3B	PALMER	3
3B	PELICAN	1
3B	PERRYVILLE	1
3B	PETERSBURG	7
3B	PORT LIONS	1
3B	SAND POINT	45
3B	SELDOVIA	5
3B	SEWARD	8
3B	SITKA	14
3B	SOLDOTNA	1
3B	WASILLA	2
	Total 4A	325

Area	Residence	Count
4A	AKUTAN	3
4A	ANCHOR POINT	1
4A	ANCHORAGE	3
4A	CENTRAL	1
4A	DUTCH HARBOR	5
4A	FAIRBANKS	1
4A	FALSE PASS	1
4A	HOMER	30
4A	KODIAK	41
4A	NIKOLAEVSK	1
4A	PETERSBURG	3
4A	SAND POINT	1
4A	SEWARD	3
4A	SITKA	9
4A	UNALASKA	10
4A	WASILLA	1
	Total 4B	114

Area	Residence	Count
4B	unidentified	2
4B	ATKA	6
4B	GUSTAVUS	1
4B	HOMER	6
4B	JUNEAU	1
4B	KODIAK	15
4B	PELICAN	1
4B	PETERSBURG	4
4B	SEWARD	2
4B	SITKA	2
	Total 4B	40

Area	Residence	Count
4C	unidentified	3
4C	ANCHORAGE	1
4C	HOMER	2
4C	KODIAK	5
4C	S T G E O R G E ISLAND	12
4C	ST PAUL ISLAND	30
4C	UNALASKA	1
4C	WESTHAVEN	1
4C	SEASIDE	1
4C	ANACORTES	2
4C	BOTHELL	1
4C	CAMANO ISLAND	1
4C	EDWARDS	1
4C	GIG HARBOR	2
4C	POULSBO	1
4C	SEATTLE	3
	Total 4C	67

Area	Residence	Count
4D	unidentified	1
4D	ANCHORAGE	2
4D	HOMER	1
4D	KODIAK	9
4D	NOME	2
4D	PETERSBURG	1
4D	SAVOONGA	2
4D	SEWARD	2
	Total 4D	20

Area	Residence	Count
4E	unidentified	13
4E	CHEFORNAK	9
4E	DILLINGHAM	7
4E	EGEGIK	2
4E	JUNEAU	1
4E	KIPNUK	12
4E	KWIGILLINGOK	1
4E	MANOKOTAK	1
4E	MEKORYUK	27
4E	NAKNEK	4
4E	NEWTOK	8
4E	NIGHTMUTE	13
4E	NOME	6
4E	PILOT POINT	1
4E	TOKSOOK BAY	36
4E	TUNUNAK	23
	Total 4E	164

Source: Jesse Gharrett, NMFS RAM Division, 4/5/00

In its letter to the Council dated June 16, 2000, the IPHC staff commented on the application of the 32 inch minimum size for subsistence halibut while commercial fishing:

> We conclude that any retention of subsistence fish during IFQ or CDQ fishing without the use of a uniform 32-inch minimum size limit would create situations that make enforcement of normal IFQ or CDQ regulations difficult, if not impossible. Enforcement staff will have no means of enforcing the 32-inch commercial limit at sea if subsistence-legal but less than 32-inch fish are also aboard a vessel. We also believe that having more than one legal gear definition on an IFQ-subsistence trip will cause enforcement problems. This would be the case for fish caught by legal IFQ gear (as defined by IPHC regulations) and retained for subsistence with the suboptions being considered by the Council for halibut subsistence. For example, the legal limit of 60 hooks defined for subsistence gear (Alternative 2, Option 3, Suboption B, Item 4) is probably exceeded by most commercial halibut longline gear. We therefore suggest that the Council avoid implementing subsistence regulations, such as number of hooks, that are unenforceable on a commercial IFQ trip.
>
> We recognize the inconsistency with our statement above and what the Commission and the Council have approved for Area 4E. We view Area 4E as a unique situation, in that the exemption allowed by the Commission permits a traditional and local use of halibut less than 32 inches to continue, albeit with strict regrowing requirements. The Commission's concern about sublegal halibut entering the marketplace is minimal for Area 4E, as most villages in the area do not have easy access to commercial markets.
>
> In summary, we believe it is necessary to institute a uniform 32-inch size limit and a requirement for the use of IPHC-legal fishing gear only, if subsistence halibut are to be retained during IFQ/CDQ fisheries.

In conclusion, selectivity can and will change even if vessels do not change grounds, simply because a lower size limit allows them to retain fish that are presently discarded. Fishing the same grounds with a reduced (or removed) size limit will result in a shift of size selectivity. Shifting grounds may act to further shift the selectivity.

5.1.2.3.1 Groundfish bycatch

Groundfish bycatch associated with halibut longlining could result in bycatch as much as 10-18% for rockfish in Area 2C, 27% for sablefish and 12% for Pacific cod bycatch in the GOA, and 15% for rockfish, 29% for sablefish, 14% for P. cod and 11% for Greenland turbot in the BSAI. Rockfish bycatch, in particular yelloweye rockfish in Southeast Alaska, may diminish local populations already at risk.

The rates described above depict the background bycatch rates of these species in commercial longline fisheries. The State strictly manages rockfish in State waters. State daily bag limits for pelagic shelf rockfish (black, blue, yellowtail, widow, and dusky) are 5 rockfish, 10 in possession. For other rockfish, the limit is: 5 per day, 10 in possession except for yelloweye rockfish for which the limit is only 2 per day, 4 in possession. An exception to these limits occurs for Ketchikan, Craig, and Sitka Sound: other than pelagic shelf rockfish the bag and the possession limit is 3 rockfish of which no more than one can be yelloweye.

Alaska Natives expressed a desire to retain all fish harvested while subsistence halibut fishing, including rockfish and sablefish. An upward bound for impacts on demersal shelf rockfish can be estimated using an assumption that *all* of the 1.3 million pounds of halibut for all non-commercial gear in Area 2C would be harvested using skate gear. Under this worst case scenario, a maximum of 234,000 lb of yelloweye rockfish

could be harvested as bycatch (assuming a maximum of 18% bycatch; ranging between 10-18% for Area 2C). The discard mortality rate (DMR) for rockfish in the entire GOA halibut longline fishery was 6%. Using this rate results in bycatch of 78,000 lb of rockfish. The 1999 quota for yelloweye rockfish was 748,000 lb.

The 27% sablefish bycatch rate used in the GOA commercial longline fishery may result in a maximum 350,000 lb of sablefish landed by subsistence skate gear, assuming that these rates are also applicable to the subsistence fishery which is likely to occur close to villages in nearshore waters. Pacific cod is also likely to be taken with subsistence skates, at a (commercial) rate of about 12%, resulting in maximum landings of about 156,000 lb.

5.1.2.4 Option 4. Allow the customary and traditional trade of subsistence halibut.

Suboption A. Customary and traditional trade through monetary exchange shall be limited to an annual maximum of:

1) $0;
2) $200;
3) $400;
4) $600.

Suboption B. Customary and traditional trade through non-monetary exchange is allowed with:

1) other Alaska tribes;
2) any Alaska rural resident;
3) any Alaska resident;
4) anyone.

Option 4 would allow for the customary and traditional trade of subsistence halibut. Suboption A allows for the customary and traditional trade of subsistence caught halibut, limited up to an annual amount of $600. Public testimony reported that cash is sometimes given to subsistence fishermen to defray the cost of the trip, such as for gas. Other trade also occurs, such as caribou or moose with Interior tribes.

The cash exchange limitation on the amount of subsistence-caught halibut traded -- $200, $400, or $600 under Suboption A is similar to the current State regulation limiting the customary trade of herring roe on kelp, described above. It is not known if the three levels ($200, $400, or $600) provide for, or restrict, established patterns of customary trade of halibut, as there is no information on patterns of exchange as described above. On their face, these limits appear to be consistent with a receiver compensating a person's expenses for harvesting a wild food, such as fuel costs (Wolfe and Magdanz 1993). However, as this type of compensation is a relatively informal arrangement between persons (and so may not technically constitute a "sale"), regulations providing for them may not be formally required.

There is a potential that establishing in regulation any trade limit ($200, $400, or $600) has the potential for creating a new incentive for some subsistence fishers to produce halibut for trade. In small rural villages, or among Alaska Native tribal groups, the volume of additional halibut harvested is likely to be small due to this added incentive, as the pool of consumers is demographically limited. In mid-sized towns (Sitka, Kodiak City, Unalaska) and urban places (Juneau, Ketchikan, Anchorage) with larger populations and seasonal visitors, the potential for the incentive creating new harvests are greater. Regulations defining the area or group might deal with this potential. A regulation restricting customary trade to rural villages might prevent incentives for new subsistence harvests for trade in mid-sized towns and urban places. A regulation restricting customary trade to Alaska Native tribal members might prevent the development of new

subsistence harvest patterns for customary trade; this option would be linked to definitions of eligibility for subsistence halibut fishing.

Three examples of customary and traditional trade of wild foods in rural Alaska are presented in Wolfe and Magdanz (1987) -- eulachon oil in southeast Alaska (Chapter 1), seal oil in western Alaska (Chapter 2), and herring roe on hemlock branches in southeast Alaska (Chapter 3). According to Wolfe and Magdanz, customary and traditional trade is most commonly small-scale in terms of the volume of resources traded between rural families, although there are some exceptions to this when the harvest is a specialized activity (such as the trade of herring roe on hemlock branches in southeast Alaska, which may involve thousands of pounds). Customary and traditional trade appears to occur most commonly between Alaska Native families; however, some trade also occurs between non-native families in rural areas. The consumption of the food occurs within the state, and almost always within the region where the resource was harvested. In some instances, the money given to a producer is described as compensation for the person's expenses for taking the food item, such as the fuel and ammunition costs for taking a caribou or a seal. In some instances, there are long-standing trade relationships between families or between rural communities, such as the trade of seal oil between coastal and inland areas, or the trade of roe on hemlock between southeast Alaska communities. In some instances, subsistence food items (like eulachon oil) are sold in small amounts over-the-table as part of trade fairs or ceremonial gatherings. This small-volume trade is usually not monitored by state or Federal agencies, and the trade usually does not present any biological problems for the wild resource taken for subsistence uses.

The regulatory management regimes differ for the three examples of customary and traditional trade provided in Wolfe and Magdanz (1993). (1) For seal oil, Federal regulations allow for the non-wasteful harvest of marine mammals by Alaska Natives only, and regulations allow for the sale of marine mammal food products in Native villages and towns in Alaska. To date, there have been no regulations limiting the customary trade of marine mammal food items in Native villages and towns in Alaska, and the essentially self-regulating trade has not resulted in significant biological impacts on seal populations. (2) The annual possession limit for herring roe on kelp is 32 lbs per person or 158 lbs per household of more than two persons, unless a harvestable surplus exists and the department issues additional permits. *See* 5 AAC 01.730(g). The limit on customary trade follows the annual possession limit under the permit issued under .730(g). *See* 5 AAC 01.717(a). There is no permit limit for herring roe on hemlock. The permit limit was established by the BOF to prevent a significant flow of roe on kelp into commercial export markets for roe on kelp. As the trade of roe on hemlock occurs primarily within the region's Alaska Native tribes which comprise a limited consumption group, state regulations allow for that distribution pattern to be self-limiting. (3) For eulachon oil, there are no state regulations that allow for the trade of subsistence-caught eulachon or eulachon oil; consequently, the long-established trade of eulachon oil exists outside the legal regulations. Under the state subsistence law, the customary trade of subsistence foods is recognized and defined as "the limited noncommercial exchange, for minimal amounts of cash, as restricted by the appropriate board, of fish or game resources", so presumably the eulachon trade could be eventually recognized in regulation under this statutory definition by the Alaska Board of Fisheries. Consequently, the three examples of customary trade present three different management approaches – customary trade with no regulated limits (seal oil, roe on hemlock), customary trade with a regulated limit (herring roe on kelp), and customary trade with no regulatory recognition (eulachon oil). Note that the trade of eulachon oil is not entirely without recognition under State regulation. The general State regulations apply to the customary trade of any subsistence resource, regardless of whether it is specifically mentioned, limited, or restricted in any way by the appropriate Board.

There are no specific studies of the customary and traditional patterns of sharing, barter, or trade of halibut in rural areas. Without systematic information, it is difficult to assess if there are special distribution patterns for halibut which are distinct from wild resources like seal oil, eulachon oil, or herring roe on

hemlock. It is known that halibut is commonly distributed between households, as shown by the number of surveyed households who reported receiving and giving halibut in Table 5.13. It is known from qualitative observation that the majority of halibut is distributed between households in rural Alaska through sharing, and these exchanges do not involve cash. However, there are no statistics on the extent to which small-scale exchanges for cash are involved in the non-commercial distribution of halibut in rural areas.

The leakage of subsistence-caught halibut into commercial markets is a potential problem. There are relatively large-volume commercial markets for halibut in Alaska's large towns (such as Sitka and Kodiak City) and cities (such as Juneau and Anchorage), and there are larger-volume commercial export markets for halibut. Currently, state regulations prohibit the commercial sale and purchase of halibut caught in state-authorized subsistence fisheries.

Suboption B addresses with whom non-monetary exchanges for subsistence halibut would be allowed. Customary and traditional trade is one way that wild foods are distributed through non-commercial channels between households in rural Alaska, along with sharing and barter (Wolfe and Magdanz 1987; Burch 1988; Langdon and Worl 1981). The distribution of subsistence-caught wild foods between households is extremely common in rural Alaska communities (Wolfe and Magdanz 1993). It is typically the case in a rural village that about one-third of households are the main producers of wild foods consumed in the community, and about two-thirds of the households receive wild foods produced by others (Wolfe 1987). Households who receive wild foods include elderly households who no longer fish and hunt, households of single mothers with young dependent children who cannot fish and hunt themselves, households of young couples just getting started who are beginning to acquire the equipment for harvesting and processing wild foods, and households who do not fish because of health-related or other disabilities. Studies by the Division of Subsistence indicate that subsistence foods commonly flow to these receiving households from producing households through long-established non-commercial distribution systems. Wild foods are distributed through several non-commercial means, including the following – sharing, barter, and small-scale cash exchanges. The types of non-commercial distribution found in rural areas are listed in Table 3 of Wolfe and Magdanz (1993), and include the following:

sharing- generalized reciprocity. This is the sharing of harvested resources from one person to others without an expectation on the part of the giver or obligation on the part of the receiver of something returned in compensation. Sharing like this commonly occurs between relatives and between close friends.

sharing- delayed reciprocity. This is giving of harvested resources from one person to another without reciprocal compensation, but where the receiver gives back at later dates (sometimes over years) other goods, services, or money. Delayed reciprocity can be "balanced", where the goods or services exchanged over time are of approximate equal value. It can be "unbalanced", where the largest volume of resources flows in one direction.

sharing- redistribution. This occurs where wild resources are given by the harvester to a centralized person or location (like a food cache), from which the resources are then redistributed at some later date, typically by a person other than the harvester.

sharing- division among cooperative workgroup. This is the division of a harvest between members of a cooperative production workgroup (such as a hunting party or hunting crew), commonly in the field and following conventional rules (such as a shares system).

sharing - ceremonial giving. This is the giving or sharing of wild resources in a ceremonial context, such as potlatches, song fests, first fruit observances, Slavi, religious rituals, and so forth.

barter. This is the immediate exchange of one wild food product for another product, not involving money.

customary and traditional trade - non-commercial exchanges involving money. This is the immediate exchange of wild resources for money outside the context of a store, commercially-licensed buyer, or other mercantile facility. The exchanges are typically of relatively limited volume and between individuals with personal relations.

The Council must resolve several policy issues related to customary trade Option 4 that other Federal agencies with responsibilities for managing subsistence also face. Allocational issues may arise if sufficient numbers of eligible subsistence participants either enter the subsistence fishery and/or initiate barter to take advantage of an allowance for cash sales of halibut (Federal Subsistence Board 1994). Resulting competition with local users would be controversial and could require increased management at the local level. At the same February 1997 meeting that the Council initiated this regulatory amendment, the Council also requested preparation of an analysis for developing a local use plan for halibut in Sitka Sound. Ultimately, any increase in the amount of subsistence halibut harvested will result in direct reductions in commercial catches, thus redistributing fishing income from commercial fishermen to subsistence fishermen. Similarly, creation of a subsistence category for halibut, will adjust the accounting of halibut from sportfishing to subsistence categories.

Lastly, the Council may not assume that it may rely on the State to administer a program for subsistence in which eligibility is based on rural residency. All Alaskans are eligible to participate in the State's subsistence programs as the Alaska Supreme Court stuck down the rural residency requirement as unconstitutional in the *McDowell* decision. Consequently, the State's subsistence program dovetails no better with Alternative 2, Option 2 Suboption B than any of the other suboptions under consideration. The State will continue to collect subsistence harvest information from subsistence users. But the State cannot – consistent with its constitution- actively administer a State licensing program for subsistence in which eligibility is not open to all Alaskans who wish to participate. Even so, it may be permissible for the State to offer general subsistence fishery permits to all interested Alaskans, and for such permits to carry the notation that the user must meet the eligibility requirements set by the Council in order to take halibut. Possession of the permit itself would not facilitate enforcement of the eligibility requirements for halibut. But the use of such permits could provide a vehicle for the collection and monitoring of harvest data by the state. Additional consultations between NOAA General Counsel and the State of Alaska Department of Law will be necessary to work out additional legal issues.

Definitions of terminology used in this analysis are included under Appendix IV.

5.1.2.5 Option 5. Define a daily bag limit of between 2-20 halibut.

Suboption. No bag limits for subsistence halibut..

Option 5 would define daily bag limits between 0 and 20 for halibut subsistence purposes. Currently, non-commercial fishermen are subject to a Federal bag limit of two fish per day and State sport, personal use, and subsistence regulations. No data exists to analyze the range of no bag limit to a maximum of twenty fish per day.

A bag limit may be of limited use for defining subsistence. It is not part of customary and traditional practice of any Alaska tribe. It is more frequently applied in sport fisheries to limit harvest.

5.1.2.6 Option 6. Develop cooperative agreements with tribal, State, and Federal governments to collect, monitor, and enforce subsistence harvests and develop local area halibut subsistence use plans in coastal communities.

The following represents advice from NOAA General Counsel regarding Option 6:

> Option 6, if adopted by the Council, would encourage (1) the development of co-management agreements with tribal, State, and Federal governments and other entities to collect, monitor, and enforce subsistence harvests and (2) the development of local area halibut subsistence use plans in coastal communities. Authority exists under the Halibut Act for communities to develop and submit to the Council, and the Council and Secretary to review and approve, local area halibut subsistence use plans.
>
> The authority to establish co-management agreements under the Halibut Act is less certain. In contrast to the Marine Mammal Protection Act, which contains explicit authority for the Federal government to enter into co-management agreements with tribal governments, the Halibut Act contains no express provision authorizing the development of co-management agreements between tribal, state and Federal entities. In fact, the Halibut Act has been interpreted as vesting authority to manage Pacific halibut in Convention waters solely in the Federal government. NOAA General Counsel has stated that, taken together, the Convention and the Halibut Act amount to a pervasive scheme of federal regulation that occupies the field to the exclusion of all State laws that are not identical to the Federal regulations. Consequently, states have no regulatory authority in Convention waters to which the Councils and the Federal government may defer. Although NOAA General Counsel has focused on the authority of state governments, rather than tribal governments, under the Halibut Act, the same constraints exist for both -- pervasive Federal regulatory authority and the lack of express management authority to either State or tribal governments under the language of the Halibut Act prohibit the deferral of Federal management authority. The Federal government can enter into memorandums of understanding with other governmental entities for the collection of data, monitoring of activities, etc. However, the ability to defer the development of regulatory provisions or the enforcement of management provisions through co-management agreements is not provided for in the Halibut Act.
>
> Setting aside the issue of statutory authority to develop and enter into co-management agreements under the Halibut Act, there are other difficulties with the development and implementation of co-management agreements for halibut subsistence management. First, the rural residency and Alaska native preferences contained in all of the suboptions currently under consideration for defining eligibility conflict with the State of Alaska Constitution. As a result, co-management with the State of Alaska would be difficult at this time, particularly a co-management agreement that addresses determining eligibility and enforcement of the halibut subsistence measures the Council may recommend and the Secretary may approve. Second, several of the eligibility suboptions extend eligibility to tribal as well as non-tribal members within a community. Without the designation of "Indian country" in Alaska, a tribal government could only regulate and enforce any halibut subsistence measures against its members and could not extend its jurisdiction and management authority to non-tribal members living in the community.
>
> Given the above, the provision within Option 6 pertaining to the development of co-management agreements does not appear to be authorized or feasible at this time.

A "co-operative agreement" reporting vehicle to collect harvest and size data as required by the IPHC for stock assessment, however, would be necessary. Option 6 originally described development of co-operative agreements until the Council amended the language to "co-management agreements" in June 2000.

Improved data collection would be a significant element of proposed management of the halibut subsistence fishery. Basic characteristics of the noncommercial halibut fishery in rural Alaska, including locations, gear types, seasonality, size, and trends, are needed to monitor the effectiveness and appropriateness of whatever halibut subsistence regulations are developed. The data are also needed to appropriately and accurately account for the removals to assure proper management of the halibut resource.

IPHC has testified to the Council that monitoring and reporting is very important for halibut management. Monitoring of harvest amounts and size composition of halibut could be accomplished by IPHC, NMFS, ADF&G, USFWS, and/or tribal entities, among others. For the halibut stock assessment, IPHC staff would treat subsistence removals just as they do for bycatch, in that staff would estimate the fraction of >81 cm halibut ("legals") and sublegals, regardless of a size limit. Reporting of halibut size composition is required by Area 4E halibut subsistence users under the allowance to retain sublegal halibut in that area. Almost all of the Tribal villages that may be approved for halibut subsistence under Alternative 2, Option 2, Suboption A are parties to various organizations. While the cultural traditions of individuals may not facilitate reporting, the organizations to which the villages belong are sufficiently versed in contemporary regulations to accommodate a reporting framework (e.g., Area 4E). Rural government entities may also be appropriate reporting entities under Alternative 2, Option 2, Suboption B.

Subsistence fishing permits would provide a means of obtaining harvest information and identifying eligible individuals or entities. ADF&G administers an extensive State subsistence fishing permit system. The State cannot restrict its state subsistence permits based on residency. However, ADF&G could issue general halibut permits which state that federal regulations restrict eligibility to certain classes of people (such as tribal member or rural residents). This administrative approach would allow the state to issue permits under each of the eligibility options above. An alternative administrative arrangement is for NMFS to issue subsistence halibut permits, or for NMFS to designate other federal agencies to issue halibut fishing permits.

Any expansion of subsistence rights can be expected to be controversial. Proposed restrictions on the halibut charter boat fleet is evidence of competition for the halibut resource (NPFMC 1997). General discussions before the Council have included reports of relatively low levels of subsistence removals. Alaskan halibut subsistence harvests amount to less than one percent of the 1997 Alaska halibut commercial quota, and is roughly the same percentage as subsistence to total salmon removals. However, expansion of those removals due to expansion of eligibility and/or gear requirements than what is currently allowed and (hopefully) accounted for under Alternative 2 may result in dramatically increased harvests, although at still relatively small levels compared with commercial and recreational removals.

In many regions, commercial fisheries have been incorporated into the traditional mixed, subsistence-cash economies (Wolfe 1984). The NMFS Enforcement Division has expressed concern that some of the proposed management options may allow leakage of commercial IFQ and CDQ, as well as subsistence, landings (barter, retention of undersized fish) onto the market and that commercial removals are underestimated.

One mechanism to resolve halibut subsistence issues for certain coastal communities with other halibut allocational issues would be to separate those actions into a separate regulatory amendment currently under staff development for local area halibut management plans. In February 1997, the Council requested this analysis to facilitate development and implementation of local area halibut management plans for those areas where local conflicts have been identified. Under this framework groups would be formed to develop initiatives for Council review to address localized depletion and decreased opportunity for non-guided sport and subsistence halibut fishing. On the same track, the Council initiated development of a local halibut plan for Sitka. The Council may prefer to address subsistence for certain communities such as Juneau, Sitka, Petersburg, and Ketchikan under this separate process.

To address these problems in the short term, some basic information about the noncommercial halibut fishery in rural areas needs to be collected and analyzed. The data collected should be directed toward assessing the validity of the assumptions underlying the current harvest assessment methods: (1) that rural rod and reel harvests are measured by the mailed survey of sport fish license holders; (2) that the proportion of catch by the three noncommercial gear types are correctly estimated for the fishery as it is occurring in the 1990s; and (3) that communities are correctly grouped into strata for data expansion. Longer term data needs can be assessed depending upon the extent to which the research data supports the assumptions underlying the current monitoring system (Wolfe 1994).

5.2 Administrative, Enforcement and Information Costs

Administrative and information costs may increase under Alternative 2. Expenses may increase for permitting, monitoring subsistence harvests, determining eligibility under Alternative 2, Option 2, Suboption C, and monitoring barter under Alternative, Options 5.

An unknown, but believed to be small, number of ADF&G sportfish licenses will not be obtained as a result of Alternatives 2. Since an ADF&G sportfish license is required for all fresh and marine water sport fishing, it is believed that few persons obtain a license for the sole purpose of subsistence halibut fishing. ADF&G staff will provide additional information prior to final action.

Enforcement costs may increase under Alternative 2 relative to Alternative 1, as it creates a new category of regulations that require enforcement.

NMFS Enforcement and US Coast Guard comments will be provided as a supplement to the analysis at final action.

6.0 CONSISTENCY WITH OTHER APPLICABLE LAWS

6.1 Halibut Act Requirements

The North Pacific Halibut Act of 1982 governs the promulgation of regulations for managing the halibut fisheries, in both State and Federal waters. The language in the Halibut Act regarding the authorities of the Secretary of Commerce and the Regional Fishery Management Councils is excerpted below:

'The Regional Fishery Management Council having authority for the geographic area concerned may develop regulations governing the U.S. portion of Convention waters, including limited access regulations, applicable to nationals or vessels of the U.S., or both, which are in addition to, and not in conflict with regulations adopted by the Commission. Such regulations shall only be implemented with the approval of the Secretary, shall not discriminate between residents of different States, and shall be consistent with the limited entry criteria set forth in Section 303(b)(6) of the Magnuson Act. If it becomes necessary to allocate or assign halibut fishing privileges among various U.S. fishermen, such allocation shall be fair and equitable to all such fishermen, based upon the rights and obligations in existing Federal law, reasonably calculated to promote conservation, and carried out in such a manner that no particular individual, corporation, or other entity acquires an excessive share of the halibut fishing privileges...'

From the language in the Halibut Act, it is clear that while the jurisdictional authority for limited access and other allocational measures resides within the provisions of the Halibut Act, consideration of those types of measures is subject to many of the same criteria described under the Magnuson Act. In particular, the 303(b)(6) provisions of the Magnuson Act and the language from National Standard 4 are directly referenced. Therefore, the following sections are included to discuss the consistency of the proposed alternatives relative to certain provisions of the Magnuson Act and other applicable laws.

6.2 National Standards

Below are the 10 National Standards as contained in the Magnuson-Stevens Act (Act), and a brief discussion of the consistency of the proposed alternatives with those National Standards, where applicable.

<u>National Standard 1 - Conservation and management measures shall prevent overfishing while achieving, on a continuing basis, the optimum yield from each fishery</u>

None of the alternatives would inhibit the prevention of overfishing. Defining a subsistence category and authorizing customary and traditional practices to engage in halibut subsistence fishing will not affect the amount of halibut being harvested. Options under consideration aim to match current practice with that which will be allowed in Federal regulation.

<u>National Standard 2 - Conservation and management measures shall be based upon the best scientific information available.</u>

While information on current halibut customary and traditional practice is less definitive than for most commercial, and even sport, fisheries management considerations, A review of existing, although dated, ADF&G Subsistence Division surveys of subsistence harvests in Alaska have been heavily cited.. These surveys comprise the most definitive information available on the composition and characteristics of the halibut subsistence fishery in Alaska. Because harvest levels by subsistence users are a function of their dietary needs, rather than biomass or quota levels, definitive estimates of future harvest are not possible with the information available, except for perhaps census data.

National Standard 3- To the extent practicable, an individual stock of fish shall be managed as a unit throughout its range, and interrelated stocks of fish shall be managed as a unit or in close coordination.

The Pacific halibut stock is considered by the IPHC to be a single stock in the North Pacific, though with significant migratory patterns and shifts in distribution, both within years and across years. However, it is managed by more discrete regulatory areas (Areas 3A and 2C for example) as is described in the analysis.

National Standard 4 - Conservation and management measures shall not discriminate between residents of different states. If it becomes necessary to allocate or assign fishing privileges among various U.S. fishermen, such allocation shall be (A) fair and equitable to all such fishermen, (B) reasonably calculated to promote conservation, and (C) carried out in such a manner that no particular individual, corporation, or other entity acquires an excessive share of such privileges.

The current analysis addresses subsistence use by residents of Alaska who are Alaska Natives or live in rural communities. Because not all Alaskans may be considered as eligible for subsistence privileges (versus all non-Alaskans) the proposed alternatives comply with National Standard 4.

National Standard 5 - Conservation and management measures shall, where practicable, consider efficiency in the utilization of fishery resources, except that no such measure shall have economic allocation as its sole purpose.

An economic allocation is not proposed in the alternatives under analysis (i.e., halibut subsistence use will continue to "come off the top" of the allocation to commercial users and to the combined commercial and charter users under the February 2000 halibut GHL decision not yet submitted to the Secretary for review.

National Standard 6 - Conservation and management measures shall take into account and allow for variations among, and contingencies in, fisheries, fishery resources, and catches.

Defining a subsistence category for Pacific halibut in Alaska will conform Federal regulations to customary and traditional fishing practices by Alaska Natives..

National Standard 7 - Conservation and management measures shall, where practicable, minimize costs and avoid unnecessary duplication.

Not applicable to this issue.

National Standard 8 - Conservation and management measures shall, consistent with the conservation requirements of this Act (including the prevention of overfishing and rebuilding of overfished stocks), take into account the importance of fishery resources to fishing communities in order to (A) provide for the sustained participation of such communities, and (B) to the extent practicable, minimize adverse economic impacts on such communities.

The alternatives within this analysis are specifically proposed to address issues related to fishing communities. The Council has recognized the importance of C&T fishing practices for Pacific halibut in Alaska Native communities and rural communities with halibut C&T. The Council has initiated this action to revise Federal regulations which are inconsistent with such fishing practices. Section 3 contains detailed information describing the social needs and dependence on halibut by members of Native and rural fishing communities. In most cases, rural communities are Native communities.

National Standard 9 -Conservation and management measures shall, to the extent practicable, (A) minimize bycatch, and (B) to the extent bycatch cannot be avoided, minimize the mortality of such bycatch.

Not applicable to this issue.

National Standard 10 - Conservation and management measures shall, to the extent practicable, promote the safety of human life at sea.

Not applicable to this issue.

6.3 Section 303(a)(9) - Fisheries Impact Statement

This section of the Magnuson-Stevens Act requires that any management measure submitted by the Council take into account potential impacts on the participants in the fisheries, as well as participants in adjacent fisheries. The objective of the proposed action is to define subsistence uses for Pacific halibut among Alaska Tribal members and in rural communities in Alaska, for the purposes of recognizing the spiritual and cultural significance of these customary and traditional practices, as well as their socioeconomic importance in rural Alaska's mixed subsistence-cash economies. The impacts of defining subsistence for the Pacific halibut fishery for Alaska Native or rural communities is spiritually and culturally significant to members of those communities. Revising the Federal regulations recognizes and allows customary and traditional fishing practices to continue legally. The history and extent of such practices are discussed in detail in Sections 3 and 5. The analysis includes an examination of a range of fishing practices and needs (gear types and barter) of the Native tribes in Alaska.

6.4 Regulatory Flexibility Act

6.4.1 Introduction

The Council is considering revising Federal regulations to define subsistence for Pacific halibut in Alaska Native or rural communities in Alaska. Such an action recognizes the spiritual and cultural significance of subsistence fishing for people of those communities. These practices and the Alaska Native tribes for which the action is proposed are described in detail in Sections 3 and 5. The Council is considering a range of options for defining eligibility, gear, customary and traditional trade, bag limits, and cooperative agreements between the tribes or communities to collect necessary data for accounting of the subsistence harvests for an accurate and complete stock assessment of the species.

The Regulatory Flexibility Act (RFA) requires analysis of impacts to small businesses which may result from regulations being proposed. Until the Council makes a final decision, a definitive assessment of the proposed management alternative(s) cannot be conducted. In order to allow the agency to make a certification decision, or to satisfy the requirements of an Initial Regulatory Flexibility Analysis (IRFA) of the preferred alternative, this section addresses the requirements for an IRFA, which is specified to contain the following:

- A description of the reasons why action by the agency is being considered;
- A succinct statement of the objectives of, and the legal basis for, the proposed rule;
- A description of and, where feasible, an estimate of the number of small entities to which the proposed rule will apply (including a profile of the industry divided into industry segments, if appropriate);

- A description of the projected reporting, recordkeeping and other compliance requirements of the proposed rule, including an estimate of the classes of small entities that will be subject to the requirement and the type of professional skills necessary for preparation of the report or record;

- An identification, to the extent practicable, of all relevant Federal rules that may duplicate, overlap or conflict with the proposed rule;

- A description of any significant alternatives to the proposed rule that accomplish the stated objectives of the Magnuson-Stevens Act and any other applicable statutes and that would minimize any significant economic impact of the proposed rule on small entities. Consistent with the stated objectives of applicable statutes, the analysis shall discuss significant alternatives, such as:

    1. The establishment of differing compliance or reporting requirements or timetables that take into account the resources available to small entities;

    2. The clarification, consolidation, or simplification of compliance and reporting requirements under the rule for such small entities;

    3. The use of performance rather than design standards;

    4. An exemption from coverage of the rule, or any part thereof, for such small entities.

6.4.2 Statement of Problem

The Halibut Subsistence EA/RIR/IRFA addresses the development of fishery regulations to define the legal harvest of halibut for subsistence use in the Bering Sea/Aleutian Islands and Gulf of Alaska. First, subsistence halibut harvests are currently included within the personal use, or sportfish, regulations, largely because the pattern of subsistence use has not been adequately documented. Sportfish regulations do not reflect the customary and traditional use of halibut in rural communities. Federal fishery regulations for Alaska limit all non-commercial halibut harvests to two fish per person per day, caught on a single line with a maximum of two hooks or a spear, from February 1 through December 31. Increased enforcement of commercial halibut IFQ and CDQ regulations has led to increased awareness of the conflict between halibut regulations and customary and traditional subsistence practices of Alaska Natives in coastal communities.

Subsistence harvests may not be adequately accounted in the International Pacific Halibut Commission calculations of total halibut removals. Co-management agreements would enhance data collection of subsistence harvests. Despite the lack of complete subsistence harvests, all such harvests are estimated to account for less than one percent of total halibut removals.

6.4.3 Objective Statement of Proposed Action and its Legal Basis

The objective of the proposed action is to define subsistence for Pacific halibut in Alaska Native or rural communities in Alaska for the purpose of recognizing the spiritual and cultural significance of these customary and traditional practices to members of those communities. The Halibut Act along with the Magnuson-Stevens Act grants the Council authority to oversee allocations of the halibut fishery in Alaskan and Federal waters. Accurate accounting and the setting of total removals of halibut is under the authority of the International Pacific Halibut Commission.

6.4.4 Description of each Action (non-mutually exclusive alternatives)

The complete list of specific alternatives is contained in Chapter 1 of this document. The principal decisions in the Council's proposed action are:

1. Define subsistence.

2. Define eligibility for halibut subsistence:

3. Define legal gear.

4. Allow the customary and traditional trade of subsistence halibut.

5. Define a daily bag limit of between 2-20 halibut.

6. Develop cooperative agreements with tribal, State, and Federal governments to collect, monitor, and enforce subsistence harvests and develop local area halibut subsistence use plans in coastal communities.

6.4.5 Reasoning for, and focus of, an IRFA

To ensure a broad consideration of impacts and alternatives, this draft IRFA has been prepared pursuant to 5 USC 603, without first making the threshold determination of whether or not the proposed actions would have a significant economic impact on a substantial number of small entities. Until the Council recommends a specific alternative(s) such determination cannot be made; therefore, this section attempts to provide information to differentiate among the proposed alternatives, in the context of the requirements to prepare an IRFA. In determining the scope, or 'universe', of the entities to be considered in an IRFA, NMFS generally includes only those entities, both large and small, that can reasonably be expected to be directly affected by the proposed action. If the effects of the rule fall primarily on a distinct segment, or portion thereof, of the industry (e.g., user group, gear type, geographic area), that segment would be considered the universe for the purpose of this analysis.

6.4.6 Requirement to Prepare an IRFA

The RFA first enacted in 1980 was designed to place the burden on the government to review all regulations to ensure that, while accomplishing their intended purposes, they do not unduly inhibit the ability of small entities to compete. The RFA recognizes that the size of a business, unit of government, or nonprofit organization frequently has a bearing on its ability to comply with a Federal regulation. Major goals of the RFA are: (1) to increase agency awareness and understanding of the impact of their regulations on small business, (2) to require that agencies communicate and explain their findings to the public, and (3) to encourage agencies to use flexibility and to provide regulatory relief to small entities. The RFA emphasizes predicting (negative) impacts on small entities as a group distinct from other entities and on the consideration of alternatives that may minimize the impacts while still achieving the stated objective of the action.

6.4.7 What is a Small Entity?

The RFA recognizes and defines three kinds of small entities: (1) small businesses, (2) small non-profit organizations, and (3) and small government jurisdictions.

Small businesses. Section 601(3) of the RFA defines a 'small business' as having the same meaning as 'small business concern' which is defined under Section 3 of the Small Business Act. 'Small business' or 'small business concern' includes any firm that is independently owned and operated and not dominate in its field of operation. The SBA has further defined a "small business concern" as one "organized for profit, with a place of business located in the United States, and which operates primarily within the United States or which makes a significant contribution to the U.S. economy through payment of taxes or use of American products, materials or labor...A small business concern may be in the legal form of an individual proprietorship, partnership, limited liability company, corporation, joint venture, association, trust or cooperative, except that where the form is a joint venture there can be no more than 49 percent participation by foreign business entities in the joint venture."

The SBA has established size criteria for all major industry sectors in the US including fish harvesting and fish processing businesses. A business involved in fish harvesting is a small business if it is independently owned and operated and not dominant in its field of operation (including its affiliates) and if it has combined annual receipts not in excess of $ 3 million for all its affiliated operations worldwide. A seafood processor is a small business if it is independently owned and operated, not dominant in its field of operation, and employs 500 or fewer persons on a full-time, part-time, temporary, or other basis, at all its affiliated operations worldwide. A business involved in both the harvesting and processing of seafood products is a small business if it meets the $3 million criterion for fish harvesting operations. Finally a wholesale business servicing the fishing industry is a small businesses if it employs 100 or fewer persons on a full-time, part-time, temporary, or other basis, at all its affiliated operations worldwide.

The SBA has established "principles of affiliation" to determine whether a business concern is "independently owned and operated." In general, business concerns are affiliates of each other when one concern controls or has the power to control the other, or a third party controls or has the power to control both. The SBA considers factors such as ownership, management, previous relationships with or ties to another concern, and contractual relationships, in determining whether affiliation exists. Individuals or firms that have identical or substantially identical business or economic interests, such as family members, persons with common investments, or firms that are economically dependent through contractual or other relationships, are treated as one party with such interests aggregated when measuring the size of the concern in question. The SBA counts the receipts or employees of the concern whose size is at issue and those of all its domestic and foreign affiliates, regardless of whether the affiliates are organized for profit, in

determining the concern's size. However, business concerns owned and controlled by Indian tribes, Alaska Regional or Village Corporations organized pursuant to the Alaska Native Claims Settlement Act (43 U.S.C. 1601), Native Hawaiian Organizations, or Community Development Corporations authorized by 42 U.S.C. 9805 are not considered affiliates of such entities, or with other concerns owned by these entities solely because of their common ownership.

Affiliation may be based on stock ownership when (1) A person is an affiliate of a concern if the person owns or controls, or has the power to control 50% or more of its voting stock, or a block of stock which affords control because it is large compared to other outstanding blocks of stock, or (2) If two or more persons each owns, controls or has the power to control less than 50% of the voting stock of a concern, with minority holdings that are equal or approximately equal in size, but the aggregate of these minority holdings is large as compared with any other stock holding, each such person is presumed to be an affiliate of the concern.

Affiliation may be based on common management or joint venture arrangements. Affiliation arises where one or more officers, directors or general partners controls the board of directors and/or the management of another concern. Parties to a joint venture also may be affiliates. A contractor and subcontractor are treated as joint venturers if the ostensible subcontractor will perform primary and vital requirements of a contract or if the prime contractor is unusually reliant upon the ostensible subcontractor. All requirements of the contract are considered in reviewing such relationship, including contract management, technical responsibilities, and the percentage of subcontracted work.

Small organizations. The RFA defines "small organizations" as any nonprofit enterprise that is independently owned and operated and is not dominant in its field.

Small governmental jurisdictions. The RFA defines small governmental jurisdictions as governments of cities, counties, towns, townships, villages, school districts, or special districts with populations of less than 50,000.

6.4.8 Description of the Businesses Affected by the Proposed Action(s)

The RFA defines small governmental jurisdictions as governments of cities, counties, towns, townships, villages, school districts, or special districts with populations of less than 50,000. Therefore, the Alaska Native or rural communities are defined as small governmental jurisdictions.

The Alaska Native and rural communities are listed in Tables 2.13 and 2.15. Participation in the Pacific halibut fishery is describe din Section 3.1.1. Historical fishing practices and dependence on the fishery is described in Section 3.1.2. The Alaska Native tribes affected by this action are described in Section 3.1.3. A description of the affected communities is found in Section 3.2.

6.4.9 Recordkeeping requirements

Annual reporting of halibut subsistence removals is necessary for accurate and complete assessments of annual stock removals. Annual reporting is recognized by NMFS, the Council, and IPHC as an important component of defining subsistence for Alaska Native or rural communities. Additional recordkeeping and reporting measures is considered under Alternative 2, Option 6.

In and of itself, the proposed recordkeeping and reporting requirements would not likely represent a 'significant' economic burden on the small entities operating in this fishery.

6.4.10 Potential Impacts of the Alternatives on Small Entities

6.4.10.1 Define subsistence for Alaska Native or rural communities

As discussed in Section 5, this alternative would recognize current fishing practices for providing food for community members (subsistence) as legal. Potential magnitudes of these impacts vary across the options under consideration. However, the impacts of recognizing customary and traditional fishing practices is a positive impact on these small entities. Therefore, the net effect is a finding of no significant negative impact on these same small entities.

6.4.11 Conclusion

None of the alternatives or their options under consideration would result in a significant impact on a substantial number of small entities. A formal IRFA focusing on the preferred alternative(s) will be included in the package for Secretarial review.

7.0 SUMMARY AND CONCLUSIONS

The Halibut Subsistence EA/RIR/IRFA addresses the development of fishery regulations to define the legal harvest of halibut for subsistence use in the Bering Sea/Aleutian Islands and Gulf of Alaska. First, Federal regulations do not distinguish among sport, personal use, and subsistence harvests largely because the pattern of subsistence use has not been adequately documented. Therefore, Federal regulations do not reflect the customary and traditional use of halibut in rural communities. Federal fishery regulations for Alaska limit all non-commercial halibut harvests to two fish per person per day, caught on a single line with a maximum of two hooks or a spear, from February 1 through December 31. Increased enforcement of commercial halibut IFQ and CDQ regulations has led to increased awareness of the conflict between halibut regulations and customary and traditional subsistence practices of Alaska Natives in coastal communities.

Second, subsistence harvests may not be adequately accounted in the International Pacific Halibut Commission calculations of total halibut removals. Despite the lack of accurate landings information, all subsistence and personal use halibut harvests are estimated to account for less than one percent of total halibut removals.

A management proposal to define halibut subsistence was first developed to address a conflict between the IFQ/CDQ regulations and customary and traditional practices of Alaska Natives in IPHC regulatory Area 4E, whereby halibut CDQ fishermen were retaining undersized halibut for personal use. In December 1996, the Council initiated preparation of an EA/RIR for a regulatory amendment to allow the legal harvest of halibut for subsistence in rural communities to conform with state and Federal statutes that provide for the opportunity for the continued existence of these traditional cultures and economies.

In June 1997, the Council took final action to recommend the allowable retention of undersized halibut in the Area 4E Community Development Quota fishery. That measure took effect June 4, 1998, was renewed by the IPHC in January 2000, and sunsets on December 31, 2001. The Council did not recommend a sunset, but the IPHC wanted to ensure an adequate data collection program.

The Council deferred action in 1998 and 1999 on the larger issue of defining eligibility, legal gear, customary and traditional trade, bag limits, and cooperative management agreements for a halibut subsistence fishery, while the State of Alaska Legislature considered amending the State Constitution to become compliant with Federal law related to management of fish and game on Federal lands. The State/Federal takeover does not affect management of Pacific halibut (except in a few small areas of the National Park lands), however, the Council chose to postpone its action to allow the State to address its management issue. When the Legislature did not take such action by an October 1999 deadline, NMFS recommended that the Council reschedule final action.

In December 1999, the Council revised the alternatives in the draft analysis (listed below) and rescheduled initial review and final action for April and June 2000, respectively.

None of the alternatives is expected to result in a “significant regulatory action” as defined in E.O. 12866.

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APPENDIX I. Federally Reserved Submerged Lands and Waters*

Certain public lands that were withdrawn for Federal purposes before Alaska's statehood contain Federally reserved submerged lands and waters, including some that are deemed navigable. These areas include:

Area	Species	Determination
KOTZEBUE-NORTHERN AREA - Northern District	All fish	Residents of the Northern District, except for those domiciled in State of Alaska Unit 26-B.
KUSKOKWIM AREA	Halibut	Residents of Chevak, Newtok, Tununak, Toksook Bay, Nightmute, Chefornak, Kipnuk, and Mekoryuk.
ALEUTIAN ISLANDS AREA Aleutian Islands Area and the waters surrounding the Pribilof Islands.	Halibut	Residents of the Aleutian Islands Area and the Pribilof Islands.

Wales area: all of the submerged land and water of the Seward Peninsula lying west of Longitude 168°00'00" West, including the peninsula dividing the waters of the Bering Sea and Lopp Lagoon, together with the adjacent waters of the Bering Sea extending 3,000 feet from the shore line;

Little Diomede Island: all of the submerged land and water of Little Diomede Island together with the adjacent waters of the Bering Sea extending 3,000 feet from the shore line;

Fish River (at White Mountain): all of the submerged land and water within the SW 1/4 SW1/4 of Section 23, SW1/4 SW1/4 of Section 25, and Section 26 of Township 9 South, Range 24 West, Kateel River Meridian;

Unalakleet River: the submerged land and water from the mouth easterly up the river for one mile;

Nunivak Island: all of the submerged land and water of Nunivak Island together with the adjacent waters of the Bering Sea extending 10 miles from the shore line;

Aleutian Islands: all of the submerged land and water located on the Aleutian Islands west of False Pass, excluding Akutan, central and northern Amaknak, Sanak, Sedanka, Tigalda, Umnak, and Unalaska Islands;

Kiska Island: all submerged lands and waters of the Pacific Ocean and Bering Sea lying within 3 miles of the shoreline;

Unalaska Island: all submerged lands and waters of the Pacific Ocean and Bering Sea lying within 3 miles of the shoreline;

Akun Island: all of the submerged land and water of Akun Island together with the adjacent waters of the Pacific Ocean and Bering Sea extending 3,000 feet from the shore line;

Simeonof Island: all of the submerged land and water of Simeonof Island together with the adjacent waters of the Pacific Ocean extending 1 mile from the shore line;

Semidi Islands: all of the submerged land and water of the Semidi Islands together with the adjacent waters of the Pacific Ocean lying between parallels 55°57'00" - 56°15'00" North Latitude and 156°30'00" - 157°00'00" West Longitude;

Kodiak National Wildlife Refuge: all of the submerged land and water on Kodiak Island within the refuge boundary;

Karluk River area: all of the submerged land and water of the Pacific Ocean (Shelikof Strait) extending 3,000 feet from the shoreline between a point on the spit at the meander corner common to Sections 35 and 36 of Township 30 South, Range 33 West, and a point approximately 1 1/4 miles east of Rocky Point within Section 14 of Township 29 South, Range 31 West, Seward Meridian.

Womens Bay, Gibson Cove, portions of St.Paul Harbor and Chiniak Bay: all of the submerged land and water encompassed within U.S. Survey 2539;

Afognak Island: all submerged lands and waters of the Pacific Ocean lying within 3 miles of the shoreline;

Kenai National Wildlife Refuge: all of the submerged land and water within the former Kenai National Moose Range boundary;

Passage Canal: the waters of Passage Canal west of Decision Point;

Glacier Bay National Monument: the waters and submerged lands of Excursion Inlet, Icy Passage, North Passage, North Indian Pass and Cross Sound together with the adjacent waters of the Pacific Ocean extending three nautical miles from the shoreline as described in Presidential Proclamation No. 2330 dated 4/18/1929;

Makhnati Island: all of the submerged land and water of Makhnati Island together with the adjacent waters of Whale Bay and Small Arm extending 1 mile from the shore line;

Hydaburg area: all of the submerged land and water within the former Hydaburg Reservation including Sukkwann Island together with the adjacent waters surrounding these uplands extending 3,000 feet from the shoreline as described in Secretarial Order dated 11/30/1949;

Metlakatla area: all of the submerged land and water within the Annette Island Fishery Reserve including Annette, Ham, Walker, Lewis, Spire, and Hemlock Islands together with the adjacent waters surrounding these uplands extending 3,000 feet from the shoreline as described in Presidential Proclamation No. 1332 dated 4/28/1916. *[Note: this area probably not subject to Federal Subsistence Management Program regulations.]*

* This is a preliminary list of areas containing pre-Statehood withdrawals was compiled by the USFWS, Division of Realty in consultation with BLM, NPS, and USDA-FS.

APPENDIX II.

Annette Island Reserve halibut fishery regulations

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APPENDIX III.

Reporting Instrument for undersized halibut in Area 4E CDQ fisheries

March 24, 1999

TO: All Applicable Halibut CDQ Managers

FROM: Gregg Williams, IPHC staff

RE: Reporting of retained sublegal halibut from Area 4E CDQ halibut fishery

As you are probably aware, at its January 1999 Annual Meeting IPHC adopted the following reporting requirement concerning the retention of sublegal halibut in the Area 4E CDQ halibut fishery:

> "*The manager of a CDQ organization that authorizes persons to harvest halibut in the Area 4E CDQ fishery must report to the Commission the total number and weight of undersized halibut taken and retained by such persons pursuant to paragraph 7(1). This report, that shall include data and methodology used to collect the data, must be received by the Commission prior to December 1 of the year in which such halibut were harvested.*"

This memo is intended to outline what we envision insofar as the data and methodology reported to us by December 1, 1999.

Data

We are requiring CDQ managers to report the number and weight of sublegal halibut retained. Estimates of these items are not acceptable; only actual counts/weights will do. An important point concerns the weight units reported: (1) is the head off or on; (2) are the fish weighed round or eviscerated; and (3) are the fish washed or unwashed (i.e., is ice/slime deducted or not). ***Please indicate the status of each of these 3 items.*** The report should provide a year-end total; we do not expect nor need any type of breakdown.

Methodology

We are looking to get an explanation of how the halibut weights and counts were collected. As one example, you might require the vessel's captain to weigh and count the retained sublegals at the conclusion of the offload at the fish processor. We are not expecting an elaborate plan, but something that is reliable and makes sense. Feel free to call if you think you may have difficulty devising an acceptable method.

General Comments

Our goal is to get a proper accounting of the retained catch of sublegals. The current program expires at the end of the 1999 season. An extension has been discussed, but the Commission needs to know how much halibut is involved in this program before it will consider a program for 2000. Please call Gregg Williams (ext. 209) if you have any questions.

Insert 4 pages

APPENDIX IV.

Definitions

The following definitions are taken from 1996-97 Statewide Subsistence and Personal Use Fisheries Regulations Sec. 16.05.940 Definitions in AS 16.05 - AS 16.40 and included in the analysis at the request of the Council.

personal use fishing means the taking, fishing for, possession of finfish, shellfish, or other fishery resources by Alaska residents for personal use, and not for sale or barter, with gill or dip net, seine, fish wheel, long line, or other means defined by the Board of Fisheries.

resident means any person who for the last 12 consecutive months has maintained a permanent place of abode in the state and has continually maintained his voting residence in the state; and in the case of a partnership, association, joint stock company, trust, or corporation, **resident** means one that has its main office or headquarters in the state; however, a member of the military service who has been stationed in the state for the preceding 12 consecutive months is a resident for the purpose of this paragraph, and the dependent of a resident member of the military service, who has been living in the state for the preceding year is a resident for the purposes of this paragraph; and a person who is an alien but who for one year has maintained a permanent place of abode in the state is a resident for the purpose of this paragraph.

sport fishing means the taking or attempting to take for personal use, and not for sale or barter, any fresh water, marine, or anadromous fish by hook and line held in the hand, or hook and line with the line attached to a pole or rod which is held in the hand or closely attended, or other means defined by the Board of Fisheries.

subsistence fishing means the taking of, fishing for, or possession of fish, shellfish, or other fisheries resources by a resident domiciled in a rural area of the state for subsistence uses with gill net, seine, fish wheel, long line, or other means defined by the Board of Fisheries. The Alaska Supreme Court decided in *McDowell v. State*, 785 P.2d 1 (Alaska 1989) that the rural residency requirement of the state's subsistence law violates several provisions of the Alaska Constitution. As such, any rural residency requirement in the State statutes are without effect.

subsistence uses means the noncommercial, customary and traditional uses of wild, renewable resources by a resident domiciled in a rural area of the state for direct personal or family consumption as food, shelter, fuel, clothing, tools, or transportation, for the making and selling of handicraft articles out of nonedible by-products of fish and wildlife resources taken for personal or family consumption; and for customary trade, barter, or sharing for personal or family consumption.

The following definitions are taken from 1996-97 Subsistence Management Regulations for the Harvest of Fish and Wildlife on Federal Public Lands in Alaska (USFWS).

customary and traditional use means along-established, consistent pattern of use, incorporating beliefs and customs which have been transmitted from generation to generation. This use plays an important role in the economy of the community.

customary trade means cash sale of fish and wildlife resources regulated herein, not otherwise prohibited by State or Federal law or regulation, to support personal and family needs; and does not include trade which constitutes a significant commercial enterprise.

resident means any person who has his or her primary, permanent home within Alaska and whenever absent from this primary, permanent home, has the intention of returning to it. Factors demonstrating the location of a person's primary, permanent home may include, but are not limited to: the address listed on an Alaska license to drive, hunt, fish, or engage in an activity regulated by a government entity; affidavit of person or persons who know the individual; voter registration; location of residences owned, rented or leased; location

of stored household goods; residence of spouse, minor children or dependents; tax documents; or whether the person claims residence in another location for any purpose.

rural means any community or area of Alaska determined by the Board to qualify as such under the process described in §_____.15 of this Part.

non-commercial means subsistence, personal use, and recreational harvests of halibut.

low monetary means either $200, $400, or $600..